

SINCE 1889



Yamato

2026-2027



YAMATO SCIENTIFIC

2026
2027

YAMATO SCIENTIFIC



For the Future of Science & Technology
Yamato Scientific

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2026-2027

Laboratory Instruments

Corporate Profile

Management philosophy

Support R&D and production technology innovation in various fields and contribute to the progress and development of science and technologies.

Management principles

As an important member of Yamato Scientific, constantly provide customers the latest and the most valuable products and the service of safety and ease, cooperate with group company, actively expand group business.
To achieve the goal, the company takes laboratory instruments, laboratory facilities and industrial equipment as its core product lines, engages in design and development, production, sales and service, through the establishment of high-effective team, advanced equipment and perfect system, provide customers with high-quality products and services.

Environmental principles

In line with its management philosophy, the company is committed to the proactive promotion of environmental protection activities in all aspects of its business activities, capable of sustaining environmental protection as well as corporate profitability.

Environmental policy

1. Compliance with environmental regulations

We will comply with all environment-related regulations and adhere to the provisions of all official agreements and commitments.

2. Improvement of business processes in order to reduce the burden on the environment

We will eliminate all unjustified, unnecessary and inconsistent business processes in order to make more effective use of natural resources and energy and reduce wastes.

3. Promotion of business activities that attempt to reduce the burden on the environment

We will promote activities that will reduce the burden on the environment throughout all of our business processes: design, purchase, production, sales, distribution, use, recycling and disposal.

4. Development of environmentally-conscious products & systems

We will try to improve technologies that promote environmental protection and develop products and systems that remain environmentally friendly throughout their lifecycles.

5. Improvement and development of an environmental management system

We will continue to improve our environmental activities and pollution prevention measures by setting goals and objectives and reviewing them regularly.

6. Notification and publication of our environmental policy

We will educate our employees, and all other people who work for us, to make them familiar with our environmental policy so that they will act in accordance with its principles. We will also make our environmental policy public.

Acquisition of ISO certification



Japanese Factory
ISO9001



Japanese Factory
ISO14001



Japanese Factory
ISO13485



Chinese Factory
ISO9001



Chinese Factory
ISO14001



Chinese Factory
OHSAS18001

Design & Development

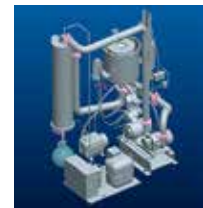
Japan

The R&D center of Yamato Scientific in Japan undertakes the product development. In a high-efficient development environment, they are committed to new products development contributing to production technology innovation. All the new achievements, not only are provided for enterprise, university and government around the world, but also make a contribution to the world's most cutting-edge research and development (the Nobel Prize) and production technology innovation.



China

Yamato Chongqing has set up a high-efficient R&D team and perfect R&D system, by introducing 3D CAD and product data management system, the product design is more standard and efficient, and also co-design with Yamato Scientific. Depending on Yamato Scientific's technology accumulation of more than 120 years and its technical support, design and develop all kinds of instruments, equipment and industrial equipment to meet customer needs and ever-changing market needs.



Production & Manufacture

The factory has production lines necessary for metal plate processing, coating, assembling, inspection and packing, and produces various instruments and equipment. Metal plate processing line is 24hr working NCT auto production line; coating line consists of powder coating and paint coating; assembly line consists of multiple production lines. Multi-varieties and small batch production mode is adopted for laboratory instruments and equipment. These production adjustments that we match with the purchase order process enable us to shorten delivery time, plan adequate stock and supply management.



1. Metal plate processing line

Yamato has NCT automatic processing equipment for punching and cutting raw materials (steel plate, stainless steel, aluminum) and equipment for bending and welding of formed material according to NC programming. The production of processed products from raw materials provides a good preparation for subsequent process.

2. Coating line

In addition to paint coating (30 micrometers thick), we also use a powder coating (60 micrometers thick), which largely improves the production capacity.

3. Assembly line

Flexibly adopt independent assembly production mode and cope with mass production in delivery period according to the orders. Visualize the project process and continue to improve efficiency.

4. Inspection line

Strictly inspect the product's appearance, electrical performance, temp. performance, etc. to ensure and maintain the quality of Yamato products.

Y Laboratory Instruments



Various product lines that precisely capture market demands

Laboratory instruments, as Yamato's main product line, contains sterilizer, spray dryer, plasma cleaner, water purifier, Furnace, constant temp. drying oven, constant temp. incubator, constant temp. water bath, constant temp. water circulator, rotary evaporator, freeze dryer, stirrer-shaker, washer, etc. Furthermore, we plan a lineup suitable for customer needs and target at improvement of research environment by providing high-quality products.



Y Industrial Equipment



Contribute to increase productivity

From lithium battery, semiconductor, electric parts to information communication, electronic materials, FPD (LCD, organic EL, PDP and others), precision machine, etc., we provide various equipment and machines to increase the industry productivity.



Laboratory Facilities



Provide suitable environment and new values

We offer equipment needed by various research and development such as fume hood, laboratory tables, clean benches and environmental test rooms. On the basis of standard products, we offer fume hood with built-in water purifier or air conditioners for external atmospheric treatment that meet the requirements of the laboratory.

The laboratory tables are made of pure steel (solid top board), allowing for pharmaceuticals resistance test, as well as special edge processing. Furthermore, we work constantly with customers to improve the work environment, including ease of movement in the lab and the solution to the storage space and environmental dissatisfaction.



Focus on the ideal next-generation laboratory

Yamato Scientific is able to develop, design and produce laboratory instruments and equipment in its own factory. With four basic concepts in mind: space saving, efficient work system, storage space and safety measures, freely design to meet the requirements of each customer. Inspection and experimentation devices are chosen for various fields of examination. Provide a free and creative environment based on the theme of people, environment and research and continuously improve to meet the customer's needs.



Support the design, establishment and relocation of laboratory

For the design, establishment and relocation of laboratory, we provide comprehensive technical support such as environmental pollution countermeasures and model selection. As per customer's requirements, from basic proposal to enforcement plan, basic design and actual operation, we can satisfactorily solve all the problems about establishment and relocation. Yamato Scientific has professional group and special views about laboratory instruments and equipment, and provides a full range of laboratory services.



Excellent technical strength to help you successfully complete the relocation of laboratories and production lines



The environmental analysis and overall planning of laboratory instruments and equipment when relocation, from laboratory facilities like experiment table and fume hood to experimental data and samples relocation, we provide safe, quick and accurate service. In addition, we plan the layout considering the working efficiency so as to create a high-efficiency and safe laboratory environment.

Laboratory Assistant



Intelligent Robot Laboratory Assistant

In research and quality control settings, many tasks still require manual operation. Some processes have not yet been automated, and their results depend on human skills and techniques. By breaking down these tasks, tracing the required skills and techniques, and converting them into quantified criteria, Yamato's Intelligent Robot Laboratory Assistant helps realize automation.

Advantages of Laboratory Assistant

- Unlike conventional robot systems designed mainly to increase handling capacity, Yamato's robot system reproduces operation procedures verified by researchers, delivering accuracy and reproducibility that are difficult to achieve through manual operation. It also addresses the challenges associated with long-duration and continuous manual work.
- In addition to optimizing the system layout according to customer requirements and available laboratory space, equipment integrated with the robot can also be customized.
- Based on human hand movements, the robot system helps reduce operator training and retraining costs.



Characteristics of Laboratory Assistant

- **Specially designed arm and auxiliary instruments/equipment**
To achieve the operations required by each customer, accurate reproduction of manual skills is essential. Based on the required motions, Yamato can develop specially designed robotic arms with additional functions and can also design and manufacture integrated automation systems with auxiliary instruments and equipment tailored to the application.
- **Combination with analytical and measuring instruments**
Drawing on extensive expertise in the functions and characteristics of analytical and measuring instruments, Yamato selects the most suitable instruments for each application.
- **Cost-conscious system proposals**
By making effective use of customers' existing instruments and equipment, Yamato helps reduce total system costs.



Application & Marketing Performance

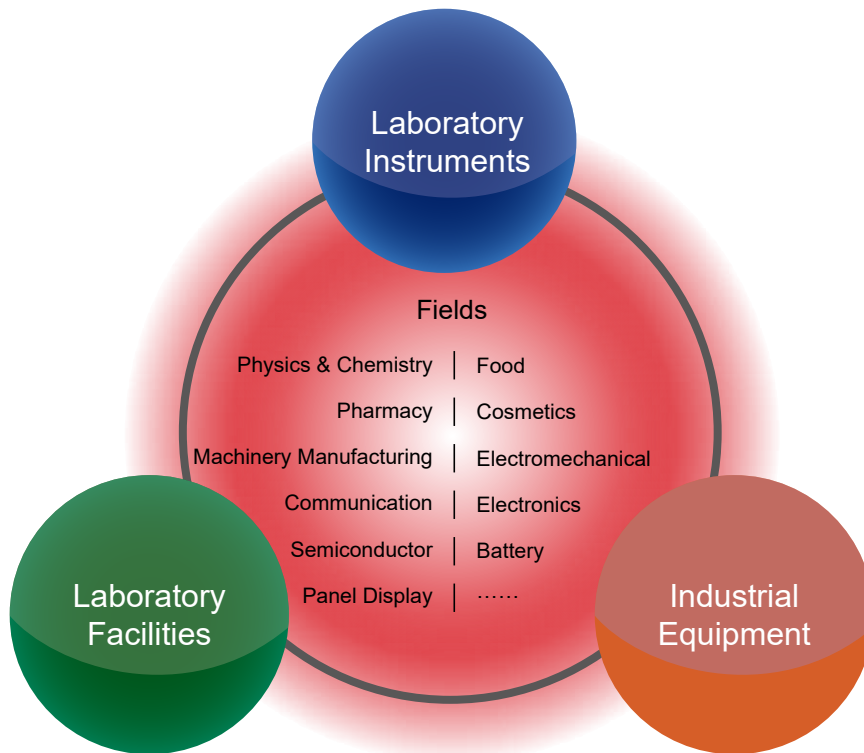


Cases

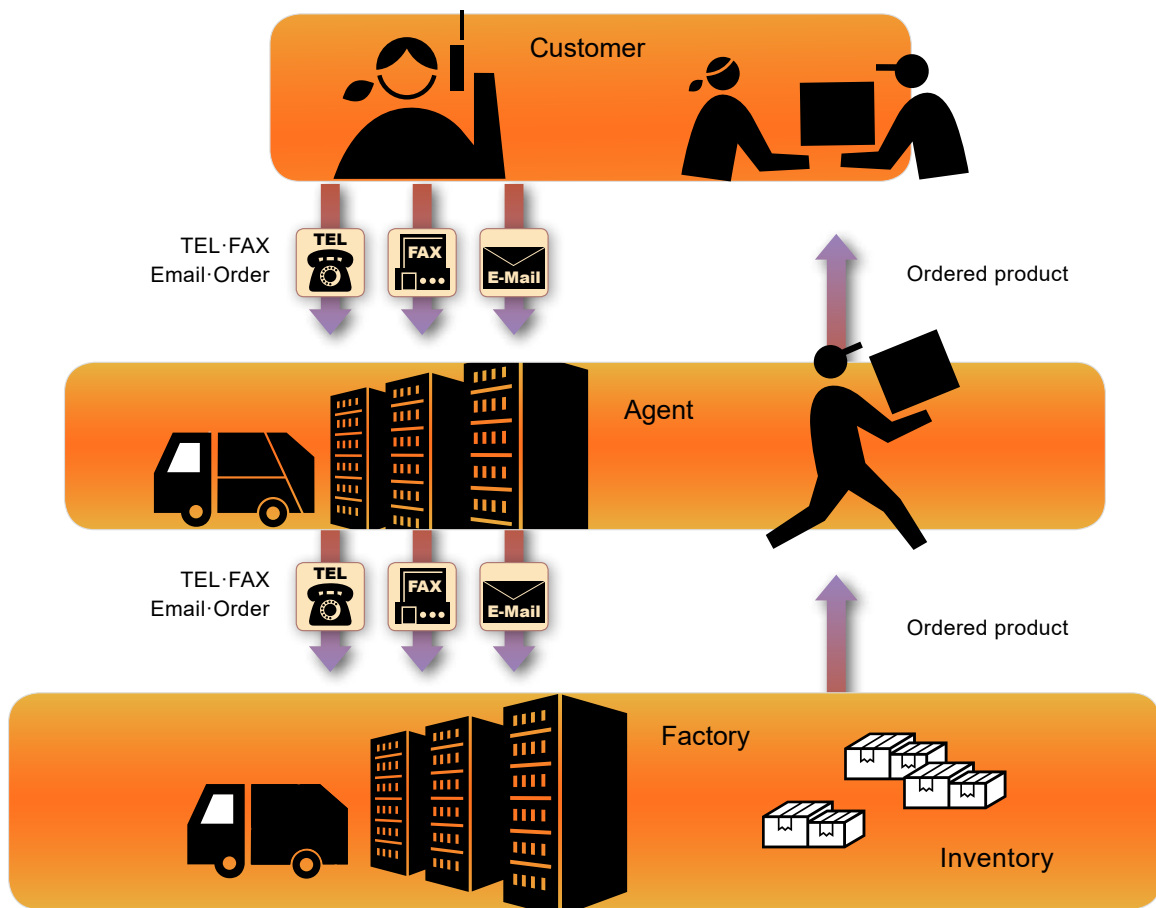
Automatic Cell Sample Manipulation System (Co-research with Tokyo University)



Application Fields



From Order to Delivery



Sales and Service Network

Domestic Bases and Distributors Network (50 bases / 208 distributors)



Headquarters of Yamato Scientific / SUNMEDIX
Harumi Triton Square
Office Tower Y (36F), 1-18-11
Harumi, Chuo-ku, Tokyo



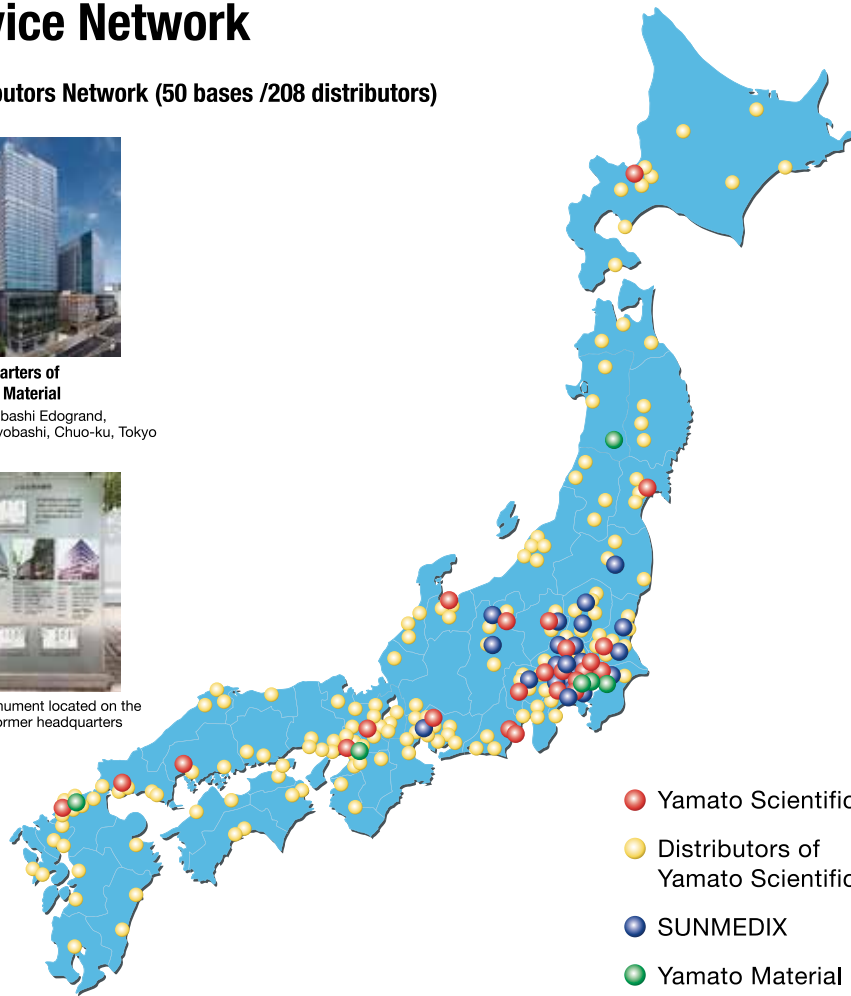
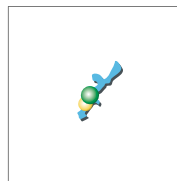
Headquarters of Yamato Material
24F Kyobashi Edogrand,
2-2-1 Kyobashi, Chuo-ku, Tokyo



Yamato Scientific Group Head Office
2-2-2 Nihonbashihoncho,
Chuo-ku, Tokyo

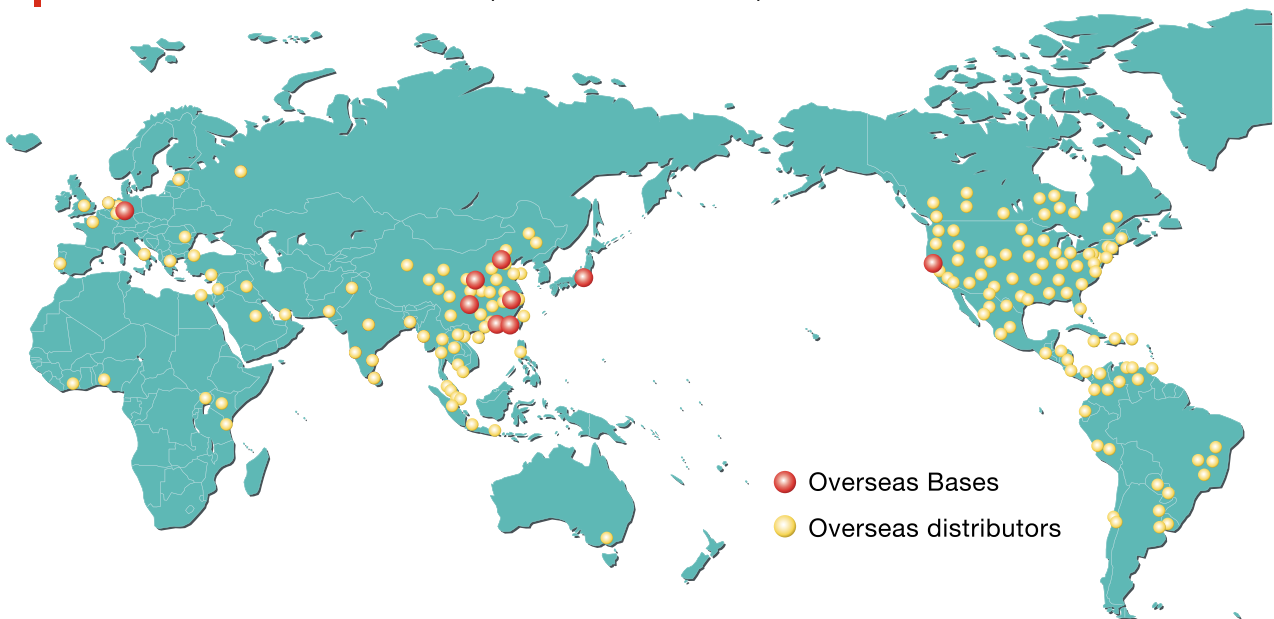


The monument located on the site of former headquarters



- Yamato Scientific
- Distributors of Yamato Scientific
- SUNMEDIX
- Yamato Material

Overseas Bases and Distributors Network (9 bases / 360 distributors)



- Overseas Bases
- Overseas distributors

Laboratory Instruments

Sterilizers	P.19
Granulation and Spray Dryers	P.35
Furnaces	P.49
Ovens	P.55
Incubators	P.103
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Baths	P.149
Water Circulators	P.157
Rotary Evaporators	P.167
Stirrers & Shakers	P.181
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A1 | Sterilizers P.19

SN-SQ



Name: Lab Autoclaves
Model: SN200C/210C/300C/310C/500C/510C, SQ500C/510C/800C/810C
Feature: Standard Type
Page 20

SJ NEW



Name: Lab Autoclaves
Model: SJ511C/811C
Feature: Touch Panel, High-Function
Page 22

SM




Name: Lab Autoclaves
Model: SM510C/810C
Feature: Drying Function
Page 24

SQL



Name: Lab Autoclaves
Model: SQL810C/1010C
Feature: Large Capacity
Page 26

SJL



Name: Lab Autoclaves
Model: SJL810C/1010C
Feature: Touch Panel, Large Capacity
Page 28

ST




Name: Lab Autoclaves
Model: ST201/301/501/511
Feature: Automatic Sterilization, Simple Operations
Page 30

SK



Name: Dry Heat Sterilizers
Model: SK401/601/801/811
Feature: Natural/Forced Convection
Page 32


SI



Name: Dry Heat Sterilizers
Model: SI411C/611C
Feature: Natural Convection
Page 34

A2 | Granulation and Spray Dryers P.35

ADL




Name: Spray Dryer
Model: ADL312SC-A
Feature: Standard Type
Page 36

GB-A



Name: Spray Dryer
Model: GB211C-A
Feature: High Functionality Type
Page 38

GB-B



Name: Spray Dryer
Model: GB211C-B
Feature: Powder Granulating, Drying, Mixing
Page 40

DL



Name: Spray Dryer
Model: DL411C
Feature: Large Capacity
Page 42

GAS NEW



Name: Organic Solvent Recovery Unit
Model: GAS510C
Feature: N₂ Closed Cycle
Page 44

GWS




Name: Solvent Washing Unit
Model: GWS410
Feature: Corrosive Solvent Wet Washing
Page 46

A3 | Furnaces


P.49

FO



Name:Electric Furnaces
Model:FO101C/111C/201C/211C/301C/311C/411C/511C/611C/711C/811C
Feature:Standard Type
 Page 50

FP




Name:Muffle Furnaces
Model:FP111C/311C/511C
Feature:Built-in Heating Wires
 Page 52

A4 | Ovens

P.55

DKT NEW




Name:Forced Convection Ovens
Model:DKT410C/610C/810C
Feature:Programmable, Touch Panel
 Page 58

DKN NEW




Name:Forced Convection Ovens
Model:DKN303C/313C/403C/413C/603C/613C/813C/913C
Feature:Standard Type, Programmable
 Page 60

DKM NEW



Name:Forced Convection Ovens
Model:DKM301C/311C/401C/411C/601C/611C
Feature:Economical Type, Fixed Temp. Operation
 Page 62

DKL NEW



Name:Forced Convection Ovens
Model:DKL301C/311C/401C/411C/601C/611C
Feature:Basic Function
 Page 64

DKV-Y




Name:Forced Convection Ovens
Model:DKV400-Y/410-Y/600-Y/610-Y/810-Y/910-Y
Feature:3.5-inch Touch Panel
 Page 65

DF-DH




Name:Forced Convection Ovens
Model:DF411C/611C, DH411C/611C
Feature:Precision Type
 Page 66

DN-H




Name:Forced Convection Ovens
Model:DN410HC/610HC
Feature:High Temp.
 Page 68

DF-DH



Name:Forced Convection Ovens
Model:DF811C/1011C, DH811C/1011C
Feature:Large Capacity, Precision Type
 Page 69

DFS-DHS



Name:Forced Convection Ovens
Model:DFS710C/810C, DHS710C/810C
Feature:Precision Type, Vertical
 Page 70

DH



Name:Forced Convection Ovens
Model:DH450C/650C
Feature:Precision Type, 500°C
 Page 71

DNE



Name:Forced Convection Ovens
Model:DNE401C/411C/601C/611C/811C/911C
Feature:Energy-Saving
 Page 72

DNF




Name:Forced Convection Ovens
Model:DNF401C/411C/601C/611C/811C/911C
Feature:Energy-Saving, Variable Airflow
 Page 74

DKG



Name: Forced Convection Ovens
Model: DKG611/611V/811/811V
Feature: Rapid Heating and Cooling
Page 76

DVT NEW




Name: Natural Convection Ovens
Model: DVT410C/610C
Feature: High-Function Type, Touch Panel
Page 77

DVS NEW




Name: Natural Convection Ovens
Model: DVS403C/413C/603C/613C
Feature: Standard Type
Page 79

DY NEW



Name: Natural Convection Ovens
Model: DY301C/311C/401C/411C/601C/611C
Feature: Natural Convection, Fixed Temp. Operation
Page 81

DX




Name: Natural Convection Ovens
Model: DX302C/312C/402C/412C/602C/612C
Feature: Economical Type, Fixed Temp. Operation
Page 82

DN-I



Name: Inert Ovens
Model: DN410IC/610IC
Feature: N₂ Replacement, Oxygen-Free Heating
Page 83

DF-I/DH-I



Name: Inert Ovens
Model: DF611IC, DH611IC
Feature: Anaerobic, Oxygen Concentration 5000ppm
Page 84

DNN



Name: Inert Ovens
Model: DNN430C/630C/460C/660C
Feature: Anaerobic, Oxygen Concentration 20ppm
Page 85

DF-S-DH-S




Name: Explosion-proof Ovens
Model: DF411SC/611SC, DH411SC/611SC
Feature: Explosion-Proof, Precision Type
Page 86

DF-S-DH-S



Name: Explosion-proof Ovens
Model: DF811SC/1011SC, DH811SC/1011SC
Feature: Explosion-Proof, Precision Type
Page 87

DH-S



Name: Explosion-proof Ovens
Model: DH450SC
Feature: Explosion-Proof, 500°C, Precision Type
Page 87

DG




Name: Ovens for Labware
Model: DG410C/450C/810C/850C
Feature: Natural Convection, Forced Exhaust
Page 88

DEC




Name: Clean Ovens
Model: DEC812C/912C
Feature: Dust-Free Environment Heating, Economical
Page 89

DE-DT



Name: Clean Ovens
Model: DE430C/430UC/630C/630UC, DT430C/430UC/630C/630UC
Feature: Dust-Free Environment Heating, Standard Type
Page 90

DES-DTS



Name: Clean Ovens
Model: DES830C/830UC, DTS830C/830UC
Feature: Dust-Free Environment Heating, Large Capacity Type
Page 92

DTN




Name: Clean Inert Ovens
Model: DTN430C/630C/450C/650C
Feature: Cleanliness Level 100, Oxygen Concentration 20ppm
Page 94

DIR




Name: Far Infrared Ray Ovens
Model: DIR631C
Feature: Far Infrared
Page 95

DR




Name: High Temp. Ovens
Model: DR210C
Feature: High Temp. 500°C
Page 96

DPT NEW




Name: Vacuum Ovens
Model: DPT40C/60C/80C/100C
Feature: High Function Type, Touch Panel
Page 97

DP



Name: Vacuum Ovens
Model: DP23C/33C/43C/63C/83C/103C
Feature: Standard Type
Page 98

ADP



Name: Vacuum Ovens
Model: ADP200C/210C/300C/310C
Feature: Economical Type, Benchtop
Page 99

DPF



Name: Vacuum Ovens
Model: DPF43C/63C
Feature: Vertical, High Precision
Page 100

DPH



Name: Vacuum Ovens
Model: DPH43C/63C
Feature: Vertical, 300°C
Page 100

DPHH



Name: Vacuum Ovens
Model: DPHH43C/63C
Feature: Vertical, 400°C
Page 101


A5 Incubators P.103

IS



Name: High-temp. Incubators
Model: IS412C/612C/812C/912C
Feature: Program Operation, Air Jacket
Page 106

IC



Name: High-temp. Incubators
Model: IC412C/612C/812C/912C
Feature: Fixed Temp. Operation, Air Jacket
Page 108

ICF



Name: High-temp. Incubators
Model: ICF410C/610C/810C/910C
Feature: Fixed Temp. Operation, Air Jacket, High-Temp. Uniformity
Page 110

IN NEW



Name: Low-Temp. Incubators
Model: IN613C/613CW/813C/913C
Feature: Program Operation
Page 112

INC NEW




Name: 2-Chamber Incubators
Model: INC822C
Feature: Upper Chamber with High Temp., Lower Chamber with Low Temp.
Page 114

IQ NEW



Name: 2-Chamber Incubators
Model: IQ823C
Feature: Upper and Lower Chambers with Low Temp.
Page 115


IPE



Name: CO₂ Incubators
Model: IPE610
Feature: Air Jacket, Dry Heat Sterilization
Page 116


A6 Plasma Equipment P.119

PR




Name: Gas Plasma Reactors
Model: PR500/510
Feature: DP Mode, Barrel
Page 122

PR




Name: Gas Plasma Reactors
Model: PR200
Feature: Compact, Benchtop
Page 123

PM



Name: Gas Plasma Cleaners
Model: PM100, PM110C
Feature: Economical, Low-Frequency Plasma
Page 124

PDC




Name: Gas Plasma Cleaners
Model: PDC200/210/510
Feature: RIE-DP Mode, Parallel Plate Electrode
Page 126

A7 | Water Purifiers

P.127

WGH




Name:Water Purifiers
Model:WGH202
Feature:Ultra-High Performance Type, High-Purity
Page 130

WG-WGS




Name:Water Purifiers
Model:WG253/1013, WGS201
Feature:Standard, Large, Slim
Page 132

WG



Name:Water Purifiers
Model:WG206
Feature:Entry Class
Page 135

WG




Name:Water Purifiers
Model:WG511/711
Feature:Distilled Ultrapure Water
Page 139

WA




Name:Water Purifiers
Model:WA511/711/731
Feature:Low-Cost, High-Volume
Page 141

WS




Name:Water Purifiers
Model:WS201/221
Feature:Distilled-Water Only
Page 143

WE




Name:Water Purifiers
Model:WE200
Feature:RO Membrane, Longer Consumables Life
Page 144

WL



Name:Water Purifiers
Model:WL200/220/220T
Feature:High Purity, Washer-Connectable
Page 146

WL




Name:Water Purifiers
Model:WL100
Feature:Simple Purifier
Page 148

A8 | Baths


P.149

BK-BA




Name:Constant High Temp. Water Baths
Model:BK(A)310C/410C/510C/610C/710C
Feature:Standard Type
Page 150

BL




Name:Constant Low Temp. Water Baths
Model:BL410C/810C
Feature:Large Capacity
Page 151

BB




Name:Constant Low Temp. Water Baths
Model:BB311C/411C/611C
Feature:Standard Type
Page 152

BBL



Name:Constant Low Temp. Water Baths
Model:BBL111C/311C
Feature:Benchttop
Page 154

BM



Name: Water Baths
Model: BM302-E/312-D
Feature: Economical Type
Page 155

BO




Name: Oil Baths
Model: BO302-E/312-D
Feature: Economical Type
Page 156

A9 | Water Circulators


P.157

CF NEW



Name: Cooling Water Circulators
Model: CF303-Y/313-X/313-Y/812-D
Feature: External Closed System, Standard Type
Page 159

CF




Name: Cooling Water Circulators
Model: CF720C
Feature: External Closed System, Low Bed Type
Page 160

CFA



Name: Precision Constant Temp. Water Circulators
Model: CFA311C/610C
Feature: External Closed System, High Precision Temp. Control
Page 161

CLS



Name: Cooling Water Circulators
Model: CLS312C/411C/610C
Feature: External Open System, Standard Type
Page 163

CLH




Name: Precision Constant Temp. Water Circulators
Model: CLH312C/411C/610C
Feature: External Open System, High-Precision Temp. Control
Page 165

A10 | Rotary Evaporators

P.167

RE



Name: Rotary Evaporators
Model: RE202-E, RE212-D
Feature: Standard Type
Page 168

A11 | Stirrers & Shakers

P.181

SA



Name: Shaker
Model: SA300/320/400
Feature: Horizontal-Vertical-Orbital-Dual Vertical Shaking
Page 182

MFD NEW



Name: Magnetic Stirrers
Model: MFD800-Y/810-Y
Feature: Magnetic Stirring
Page 184

MFH NEW



Name: Magnetic Stirrers
Model: MFH800-Y/810-Y
Feature: Magnetic Stirring with Heating Function
Page 185

A12 | Options


P.187

Fitting for Stacking




Name: Fitting for Stacking
Model: OD-ODN-ODK
Feature: Applicable To Chamber-Type Products
Page 188

Stand




Name: Stand
Model: ON-ONS-OP-OH
Feature: Applicable To Chamber-Type Products
Page 189

Data Logger



Name: Data Logger
Model: SR-AL-EX-KR
Feature: Paper-based, Paperless
Page 190

Vacuum Pump




Name: Vacuum Pump
Model: GLD-NeoDry
Feature: Oil Vane, Dry
Page 191

Air Compressor



Name: Air Compressor
Model: TYW-1/2
Feature: Small, Oil-Free
Page 194

Transformer



Name: Transformer
Model: TR10-TR20
Feature: Standard Type
Page 194

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Lab Autoclaves | Standard

SN200C/210C/300C/310C/500C/510C, SQ500C/510C/800C/810C

Operating temp. range 45~135°C

Max. working pressure 0.255MPa

Internal capacity 20L 32L 47L 50L 80L

A high-performance, easy-to-operate autoclave with an ergonomic design, equipped as standard with a cooling fan to shorten cool-down time.



Features

- Maximum sterilizing temperature goes up to 135°C, suitable for protein modification.
- By simple setting and operation, these sterilizers manage ordinary sterilization, sterilization of culture mediums and liquids, and dissolution of culture mediums.
- Custom programs can be saved for repeated use.
- Equipped as standard with cooling fan to shorten cool down time.
- The control panel and display are conveniently located on the front of the lid for easy viewing and operation.
- Equipped with multiple pressure lid opening protection locks and comprehensive safety measures.
- The SQ model features a low bed design, making it highly suitable for the retrieval of sterilized items.
- Compatible for overseas use with a wide power range of AC100-120V and AC200-240V.

Specifications

Model	SN200C	SN210C	SN300C	SN310C	SN500C	SN510C	SQ500C	SQ510C	SQ800C	SQ810C	
System	Automatic high-pressure steam sterilization										
Performance	Operating temp. range		45~135°C 45~80°C (preheat temp.) /45~60°C (retain temp.) /65~100°C (melting)/105~135°C (sterilizing)								
	Temp. unit		0.1°C								
	Max. working pressure		0.255MPa								
Lid structure		Manual upward opening and downward closing with an interlock for safety									
Chamber	Material		3mm thick corrosion-resistant stainless steel, featuring a mirror finish surface								
	Design operational life		20 years								
	Design pressure		0.42MPa								
	Design temp.		151°C								
	Heater		110V, 968W×2			110V, 1150W×2		110V, 1210W×2		110V, 1500W×2	
	Exhaust valve		One quick exhaust valve and one slow release valve								
	Options		Sample sensor interface (1/4), data logger sensor interface (1/4), pressure gauge interface (on solenoid valve piping)								
Cooling fan blade		Axial fan motor									
Controllers	Temp. control, display/setting method		PID control by microprocessor, digital display/digital setting by ▲/▼ keys								
	Timer		Timer: 0 or 1 min~99 h 59 min, timer resolution: 1 min								
	Operation functions		Melt and warm, sterilize and warm, liquid sterilize, normal sterilize, manual mode								
	Other functions		Key locking, presetting, saving, preheating, forced cooling, sample temperature sensor (option), pattern locking, alarm log saving (20 pcs), display of accumulated working time/present time, ON-OFF beeping setting								
Safety device		Sensor failure detection, SSR short-circuit detection, broken heater wire detection, prevention of air burning (liquid expansion type thermostat), alarm against the absence of drain bottle, failure in locking the lid detection, memory error detection, pressure relief valve (0.255 MPa)									
Pressure vessel specification		Class I pressure vessel									
Specification	External dimensions (W×D×H mm)		460×590×848		460×590×848		460×590×1058		520×660×881		520×660×1161
	Effective dimensions of chamber (diameter×height mm)		300×305		300×445		300×665		370×470		370×750
	Internal effective capacity of chamber		20L		32L		47L		50L		80L
	Weight		Approx. 65kg		Approx. 75kg		Approx. 85kg		Approx. 95kg		Approx. 105kg
	Power supply (50/60Hz)		AC115V 18.5A	AC220V 9A	AC115V 18.5A	AC220V 9A	AC115V 22A	AC220V 10.5A	AC115V 23A	AC220V 11A	AC115V 29A
Accessories	Basket OSM-60 (diameter 274×height 125mm), 2 PCS		Basket OSM-70 (diameter 274×height 200mm), 2 PCS		Basket OSM-70 (diameter 274×height 200mm), 3 PCS		Basket OSQ-90 (diameter 344×height 200mm), 2 PCS		Basket OSQ-90H (diameter 344×height 300mm), 2 PCS		
	1 steam collection cup, 1 drain bottle, 1 heater baffle, 1 set of sterilization test cards (30 cards), 1 filter, 1m drainage pipe 1 hose clamp, long-arm clamp (SQ800C/SQ810C model only), 1 drip tray, instruction manual										
Options		Biosafety filtration system, sample temperature sensor, internal chamber temperature measurement sensor, data logger, temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, standard basket, extended height basket									

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

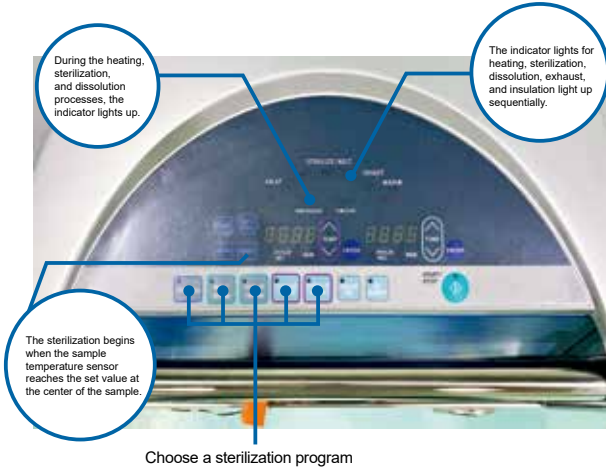
8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options



- Instrument sterilize** Sterilization of lab instruments and vessel such as flask, beaker, test tube, scissors.
- Fluid sterilize** Sterilization and disinfection of culture media, reagents, or other solutions, and keeps them warm after sterilization.
- Sterilize & Retain temp.** Dissolving culture media and maintaining them at a specific temperature to prevent solidification.
- Melt & Retain temp.** Sterilization of purified water, deionized water, and dilution water.
- Custom program** Customized temperature and time settings.

Comply with GLP/GMP inspection



Equipped as standard with 2 sensor ports on the main unit.



Optional data logger and high performance pressure gauge.



Multiple safety devices

- Steam collection cup
- Top lid's interlock mechanism
- Alarm against the absence of drain bottle
- Leakage breaker
- During any malfunction, the autoclave will automatically shutdown
- Alarm buzzer sounding and an error message being displayed
- Alarm recording (20 alarms)



Easy discharge of sterilization water

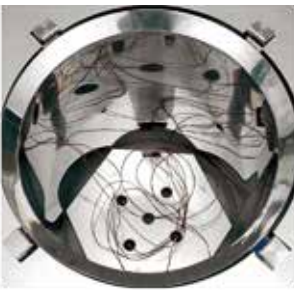
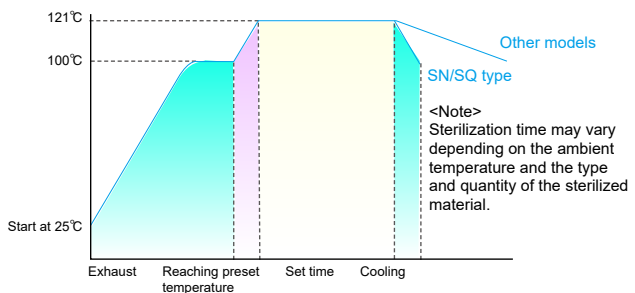
Easier maintenance with larger diameter drain pipe.

Standard cooling fan

- Cooling fan operates after sterilization.
- Cooling down to safe temperature.
- Reducing the time before samples can be taken out.
- Free to choose the forced cooling or natural cooling.

Comparison of cooling time with other devices

(Initial water temperature: 25°C, sterilization temperature: 121°C, ambient temperature: 23°C)



Sterilization starts automatically according to sample temperature sensor

The optional sample temperature sensor controls sterilization time based on the temperature of the sterilized material, ensuring effective sterilization.



Drain bottle located at the front

The drain bottle is set inside the front door for easy monitoring of the water level.

Space-saving top-opening lid design

Require less setup space compared to other machines.

Maximum set temperature of 135°C

The maximum set temperature of 135°C is suitable for protein modification.

Time-saving

Equipped as standard with automatic start and preheat function to improve time efficiency.

Universal power supply (selectable power)

All models offer a choice of AC100-120V and AC200-240V (single phase) power supply.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Lab Autoclaves | Automatic Sterilization, Touch Screen Operation

SJ511C/811C

Operating temp. range 45~138°C

Max. working pressure 0.3MPa

Internal capacity 50L 80L

The steam sterilizer features a 7-inch color touchscreen for simple operation with advanced functions.



Features

- 7-inch large touchscreen, easy operation with options for Chinese, Japanese and English languages, along with a three-level authorization management system.
- Maximum sterilizing temperature goes up to 138°C, suitable for protein modification.
- By simple setting and operation, these sterilizers manage ordinary sterilization, sterilization of culture mediums and liquids, and dissolution of culture mediums.
- Custom programs can be saved for repeated use.
- Equipped as standard with cooling fan to shorten cool down time.
- Equipped with multiple pressure lid opening protection locks and comprehensive safety measures.
- Display power consumption, accumulated power usage, CO₂ emissions, total power-on time, accumulated operating time, and accumulated times of operations.
- Two handles on each side for easy moving.
- Optional automatic water filling function available for purchase.

Specifications

Model	SJ511C	SJ811C	
System	Automatic high-pressure steam sterilization		
Performance	Operating temp. range	45~138°C: 45~80°C (preheat temp.)/45~60°C (retain temp.)/60~110°C (melting)/105~138°C (sterilizing)	
	Temp. unit	0.1°C	
	Max. working pressure	0.3MPa	
Lid structure	Manual upward opening and downward closing with an interlock for safety		
Chamber	Material	3mm thick corrosion-resistant stainless steel, featuring a mirror finish surface	
	Design operational life	20 years	
	Design pressure	0.42MPa	
	Design temp.	151°C	
	Heater	110V, 1500W×2	110V, 2000W×2
	Exhaust valve	Solenoid valves: One for full exhaust and one for slow exhaust	
	Options	Sample sensor interface (Rc1/4), data logger sensor interface (Rc1/2), pressure gauge interface (on solenoid valve piping), automatic water intake (R1/4)	
	Cooling fan blade	Axial fan motor	
Controllers	Temp. control method	PID control by microprocessor	
	Temp. control setting/display method	7-inch color LCD touchscreen for display and settings	
	Timer	1 min~99 h 59 min, resolution: 1 min or 100 h~999 h, resolution: 1 h	
	Operation functions	Melt and retain temp., sterilize and retain temp., instrument sterilize, fluid sterilize	
	Other functions	Power consumption, accumulated power usage, CO ₂ emissions, accumulated power-on time, accumulated operating time, and accumulated times of operations, key locking, presetting, saving, preheating, forced cooling, pattern locking, alarm log saving (20 pcs), display of present time, ON-OFF beeping setting, language switch function (Chinese/Japanese/English) and three-level authorization management system, sample sensor (optional)	
Safety device	Sensor failure detection, SSR short-circuit detection, broken heater wire detection, prevention of air burning (water level switch, liquid expansion type), alarm against the absence of drain bottle, failure in locking the lid detection, memory error detection, pressure relief valve (0.3 MPa), over-pressure alarm		
Pressure vessel specification	Class I pressure vessel		
Specification	External dimensions (W×D×H mm)	520×660×881	520×660×1161
	Effective dimensions of chamber (diameter×height mm)	370×465	370×745
	Internal effective capacity of chamber	50L	80L
	Weight	Approx. 95kg	Approx. 115kg
	Power supply rated current	AC220V 14A	AC220V 19A
Accessories	Basket	Basket OSQ-90 (diameter 344 × height 200mm), 2 PCS	Basket OSQ-90H (diameter 344 × height 300mm), 2 PCS
		1 steam collection cup, 1 cooling water bottle, 1 heater baffle, 1 set of sterilization test cards (30 cards), 1 filter plug, 1m drainage pipe, 1 hose clamp, long-arm clamp (SJ811C model only)	
Options	Biosafety filtration system, sample temperature sensor, internal chamber temperature measurement sensor, miniprinter, data logger, temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, standard basket, extended height basket, automatic water filling system		

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Disinfection Certificate

Low bed mode

- Convenient retrieval of sterilized items.

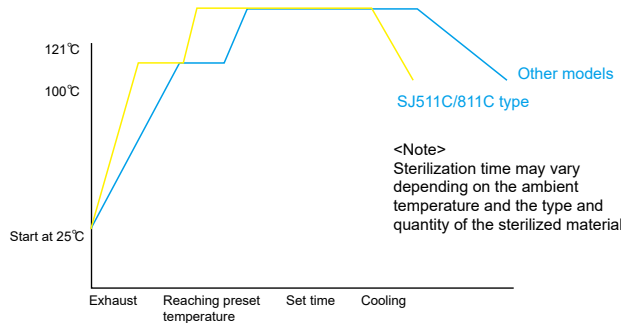


Standard cooling fan

- Cooling fan operates after sterilization.
- Cooling down to safe temperature.
- Reducing the time before samples can be taken out.
- Free to choose the forced cooling or natural cooling.

Comparison of cooling time with other devices

(Initial water temperature: 25°C, sterilization temperature: 121°C, ambient temperature: 23°C)



Control panel

- 7-inch color LCD touchscreen with operation in Chinese, English and Japanese



Main screen



Sterilization parameter settings (instrument sterilization program)



Operation mode selection (instrument sterilization program)

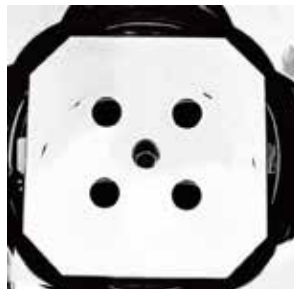


Operation mode selection (melt and retain temp. program)



Operating status monitoring (instrument sterilization program)

Sterilization starts automatically according to sample temperature sensor



The optional sample temperature sensor controls sterilization time based on the temperature of the sterilized material, ensuring effective sterilization.

Comply with GLP/GMP inspection requirements



Equipped as standard with 2 sensor ports on the main unit.



Data logger or built-in micro printer is optional

Safety valve located on the side



Convenient disassembly for safety valve replacement or calibration.



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Lab Autoclaves | Automatic Sterilization, Drying Function

SM510C/810C

Operating temp. range Sterilization: 105~135°C Drying: 135~150°C

Max. working pressure 0.255MPa

Internal capacity 50L 80L

High-performance sterilizer with fully automatic operation for sterilization and drying.



Features

- 7-inch large touchscreen, easy operation with options for Chinese, Japanese and English languages, along with a three-level authorization management system.
- Maximum sterilizing temperature goes up to 135°C, suitable for protein modification.
- By simple setting and operation, these sterilizers manage ordinary sterilization, sterilization of culture mediums and liquids, and dissolution of culture mediums.
- Custom programs can be saved for repeated use.
- Equipped as standard with cooling fan to shorten cool down time.
- Equipped with multiple pressure lid opening protection locks and comprehensive safety measures.
- Display power consumption, accumulated power usage, CO₂ emissions, total power-on time, accumulated operating time, and accumulated times of operations.

Specifications

Model	SM510C	SM810C	
System	Automatic high-pressure steam sterilization+drying		
Medical device registration certificate	None		
Performance	Operating temp. range	45~135°C: 45~80°C (preheat temp.)/45~60°C (retain temp.)/60~110°C (melting)/105~135°C (sterilizing)/135~150°C (drying)	
	Temp. unit	0.1°C	
	Max. working pressure	0.255MPa	
Lid structure	Manual upward opening and downward closing with an interlock for safety		
Chamber	Material	3mm thick corrosion-resistant stainless steel, featuring a mirror finish surface	
	Design operational life	20 years	
	Design pressure	0.42MPa	
	Design temp.	151°C	
	Sterilization heater	110V, 1210W×2	
	Dry heat heater	110V, 295W×2+455W×2	110V, 275W×2+625W×2
	Drain valve	1 solenoid valve, 1 hand valve	
	Exhaust valve	1 fast exhaust valve, 1 auxiliary exhaust valve, 1 slow exhaust valve	
	Options	Sample sensor interface (1/4), data logger sensor interface (1/4), pressure gauge interface (on the auxiliary exhaust solenoid valve piping)	
	Cooling fan blade	Axial fan motor	
Controllers	Temp. control method	PID control by microprocessor	
	Temp. control setting/display method	7-inch color LCD touchscreen for display and settings	
	Timer	1 min~99 h 59 min, resolution: 1 min or 100 h~999 h, resolution: 1 h	
	Operation functions	Melt and retain temp., sterilize and retain temp., instrument sterilize, fluid sterilize, instrument dry, sterilize and dry	
	Additional functions	Power consumption, accumulated power usage, CO ₂ emissions, accumulated power-on time, accumulated operating time, and accumulated times of operations	
Other functions	Key locking, presetting, saving, preheating, forced cooling, sample temperature sensor (option), pattern locking, alarm log saving (20 pcs), display of present time, ON-OFF beeping setting, language switch function (Chinese/Japanese/English) and three-level authorization management system		
Safety device	Sensor failure detection, SSR short-circuit detection, broken heater wire detection, prevention of air burning (liquid expansion type thermostat), alarm against the absence of drain bottle, failure in locking the lid detection, memory error detection, pressure relief valve (0.255 MPa), overpressure alarm		
Pressure vessel specification	Class I pressure vessel		
Specification	External dimensions (W×D×H mm)	520×660×881	520×660×1161
	Effective dimensions of chamber (diameter×height mm)	370×470	370×750
	Internal effective capacity of chamber	50L	80L
	Weight	Approx. 113kg	Approx. 137kg
	Power supply/rated current	AC220V 13A	
Accessories	Basket	OSQ-90 (diameter 344 × height 200mm), 2 PCS	Basket OSQ-90H (diameter 344 × height 300mm), 2 PCS
		1 drain bottle, 1 heater baffle, 1 set of sterilization test cards (30 cards), 1 filter plug, 1m drainage pipe, 1 hose clamp, long-arm clamp (SM810C model only)	
Options	Biosafety filtration system, sample temperature sensor, internal chamber temperature measurement sensor, miniprinter, data logger, temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, standard basket, extended height basket		

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Disinfection Certificate
Medical Device Registration Certificate

Low bed mode

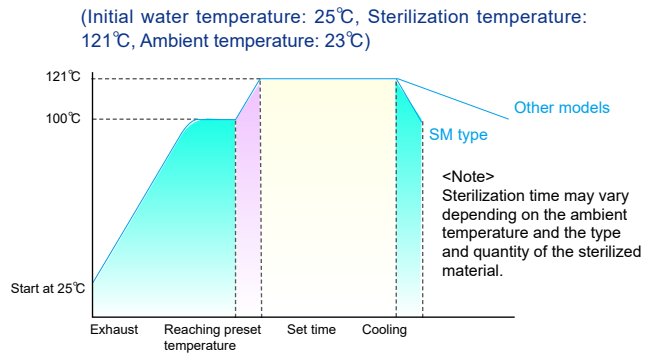
- Convenient retrieval of sterilized items



Standard cooling fan

- Cooling fan operates after sterilization
- Cooling down to safe temperature
- Reducing the time before samples can be taken out
- Free to choose the forced cooling or natural cooling

Comparison of cooling time with other devices



Control panel

- 7-inch color LCD touchscreen with operation in Chinese, English and Japanese



Main screen



Operation mode selection (Instrument sterilization program)



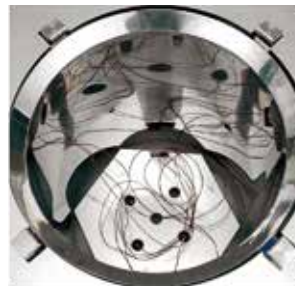
Instrument sterilization program operation



Operation mode selection (Sterilization & drying program)



Sterilization & drying program operation



Sterilization starts automatically according to sample temperature sensor

The optional sample temperature sensor controls sterilization time based on the temperature of the sterilized material, ensuring effective sterilization.

Comply with GLP/GMP inspection requirements



Equipped as standard with 2 sensor ports on the main unit.



Optional data logger and high performance pressure gauge.

Space-saving top-opening lid design

Require less setup space compared to other machines.

Maximum sterilization temperature of 135°C

Maximum sterilizing temperature goes up to 135°C suitable for protein modification.

Time-saving

Equipped as standard with automatic start and preheat function to improve time efficiency.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Lab Autoclaves | Automatic Sterilization, Large Capacity

SQL810C/1010C

Operating temp. range 45~135°C

Max. working pressure 0.255MPa

Internal capacity 85L 110L

These autoclaves offer 85L and 110L capacities for easy operation with advanced functions.



Features

- With 85L and 110L of internal capacity, it can accommodate more items for sterilization in a single cycle.
- Maximum sterilizing temperature goes up to 135°C, suitable for protein modification.
- By simple setting and operation, these sterilizers manage ordinary sterilization, sterilization of culture mediums and liquids, and dissolution of culture mediums.
- Custom programs can be saved for repeated use.
- Equipped as standard with cooling fan to shorten cool down time.
- The control panel and display are conveniently located on the front of the lid for easy viewing and operation.
- Equipped with multiple pressure lid opening protection locks and comprehensive safety measures.

Specifications

Model		SQL810C	SQL1010C
System		Automatic high-pressure steam sterilization	
Performance	Operating temp. range	45~135°C 45~80°C (preheat temp.)/45~60°C (retain temp.)/65~100°C (melting)/105~135°C (sterilizing)	
	Temp. unit	0.1°C	
	Max. working pressure	0.255MPa	
Lid structure		Manual upward opening and downward closing with an interlock for safety	
Chamber	Material	3mm thick corrosion-resistant stainless steel, featuring a mirror finish surface	
	Design operational life	20 years	
	Design pressure	0.42MPa	
	Design temp.	151°C	
	Heater	220V, 2000W×2	
	Exhaust valve	One quick exhaust valve and one slow release valve	
	Options	Sample sensor interface (R1/4), data logger sensor interface (G1), pressure interface (G1/2)	
	Cooling fan blade	Axial fan motor	
Controllers	Temp. control, display/setting method	PID control by microprocessor, digital display/digital setting by ▲/▼ keys	
	Timer	Timer: 0 or 1 min~99 h 59 min, resolution: 1 min	
	Operation functions	Melt and warm, sterilize and warm, liquid sterilize, normal sterilize, manual mode	
	Other functions	Key locking, presetting, saving, preheating, forced cooling, sample temperature sensor (option), pattern locking, alarm log saving (20 pcs), display of accumulated working time/present time, ON-OFF beeping setting	
Safety device		Sensor failure detection, SSR short-circuit detection, broken heater wire detection, prevention of air burning (liquid expansion type thermostat), alarm against the absence of drain bottle, failure in locking the lid detection, memory error detection, pressure relief valve (0.255 MPa)	
Pressure vessel specification		Class I pressure vessel	
Specification	External dimensions (W×D×H mm)	680×760×997	680×760×1154
	Effective dimensions of chamber (diameter×height mm)	450×535	450×692
	Internal effective capacity of chamber	85L	110L
	Weight	Approx. 145kg	Approx. 170kg
	Power supply (50/60Hz) rated current	AC220V 19A	
Accessories	Basket	Diameter 424× Height 200, 2 pcs	Basket Diameter 424× Height 300, 2 pcs
		1 steam collection cup, 1 cooling water bottle, 1 heater baffle, 1 set of sterilization test cards (30 cards), 1 filter, 1m drainage pipe, 1 hose clamp, long-arm clamp (SQL1010C model only)	
Options		Biosafety filtration system, sample temperature sensor, internal chamber temperature measurement sensor, data logger, temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, standard basket, extended height basket	

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

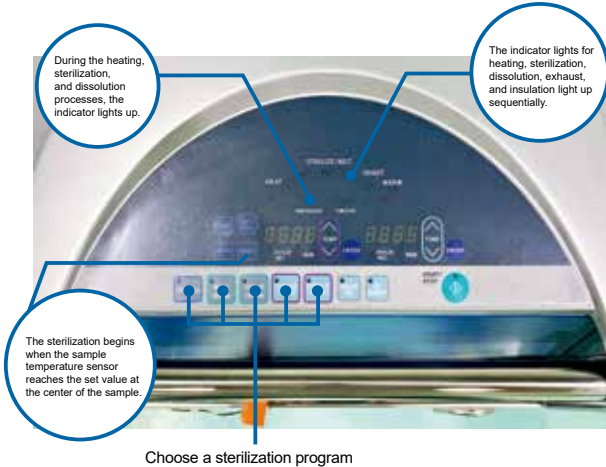
9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

CE Certification



- Instrument sterilize** Sterilization of lab instruments and vessel such as flask, beaker, test tube, scissors.
- Fluid sterilize** Sterilization and disinfection of culture media, reagents, or other solutions, and keeps them warm after sterilization.
- Sterilize & Retain temp.** Dissolving culture media and maintaining them at a specific temperature to prevent solidification.
- Melt & Retain temp.** Sterilization of refining water, purified water and dilution water.
- Custom program** Customized temperature and time settings.

Comply with GLP/GMP inspection



Equipped as standard with 2 sensor ports on the main unit.



Optional data logger and high performance pressure gauge.



Multiple safety devices

- Steam collection cup
- Top lid's interlock mechanism
- Alarm against the absence of drain bottle
- Leakage breaker
- During any malfunction, the autoclave will automatically shutdown
- Alarm buzzer sounding and an error message being displayed
- Alarm recording (20 alarms)



Easy discharge of sterilization water

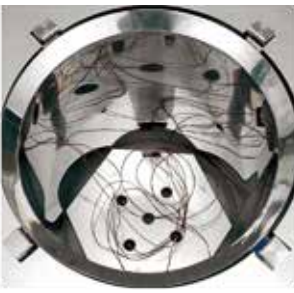
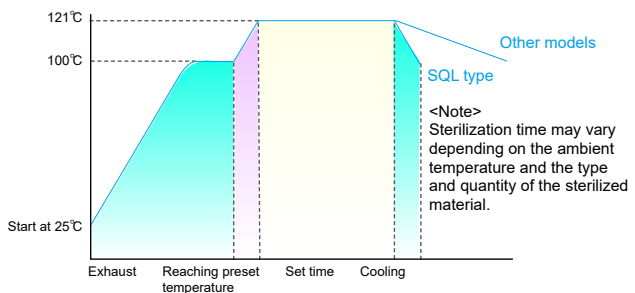
Easier maintenance with larger diameter drain pipe.

Standard cooling fan

- Cooling fan operates after sterilization.
- Cooling down to safe temperature.
- Reducing the time before samples can be taken out.
- Free to choose the forced cooling or natural cooling.

Comparison of cooling time with other devices

(Initial water temperature: 25°C, sterilization temperature: 121°C, ambient temperature: 23°C)



Sterilization starts automatically according to sample temperature sensor

The optional sample temperature sensor controls sterilization time based on the temperature of the sterilized material, ensuring effective sterilization.



Drain bottle located at the front

The drain bottle is located in front for easy access and drain water level can be monitored without opening the cabinet door.

Space-saving top-opening lid design

Require less setup space compared to other machines.

Maximum set temperature of 135°C

The maximum set temperature of 135°C is suitable for protein modification.

Time-saving

Equipped as standard with automatic start and preheat function to improve time efficiency.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Lab Autoclaves | Touch Panel, Large Capacity

SJL810C/1010C

Operating temp. range 45~135°C

Max. working pressure 0.255MPa

Internal capacity 85L 110L

The steam sterilizer features a 110L large capacity, with touchscreen for easy operation with advanced functions.



Features

- 7-inch large touchscreen, easy operation with options for Chinese, Japanese and English languages, along with a three-level authorization management system.
- Maximum sterilizing temperature goes up to 135°C, suitable for protein modification.
- By simple setting and operation, these sterilizers manage ordinary sterilization, sterilization of culture mediums and liquids, and dissolution of culture mediums.
- Custom programs can be saved for repeated use.
- Equipped as standard with cooling fan to shorten cool down time.
- Equipped with multiple pressure lid opening protection locks and comprehensive safety measures.
- Display power consumption, accumulated power usage, CO₂ emissions, accumulated power-on time, accumulated operating time, and accumulated times of operations.

Specifications

Model	SJL810C	SJL1010C	
System	Automatic high-pressure steam sterilization		
Performance	Operating temp. range	45~135°C: 45~80°C (preheat temp.)/45~60°C (retain temp.)/60~110°C (melting)/105~135°C (sterilizing)	
	Temp. unit	0.1°C	
	Max. working pressure	0.255MPa	
Lid structure	Manual upward opening and downward closing with an interlock for safety		
Chamber	Material	3mm thick corrosion-resistant stainless steel, featuring a mirror finish surface	
	Design operational life	20 years	
	Design pressure	0.42MPa	
	Design temp.	151°C	
	Sterilization heater	220V, 2000W×2	
	Exhaust valve	One quick exhaust valve and one slow release valve	
	Options	Sample sensor interface (Rc1/4), temperature test interface (G1), pressure test interface (G1/2)	
Cooling fan blade	Axial fan motor		
Controllers	Temp. control method	PID control by microprocessor	
	Temp. control setting/display method	7-inch color LCD touchscreen for display and settings	
	Timer	1 min - 99 h 59 min (resolution: 1 min)/100 h - 999 h (resolution: 1 h)	
	Operation functions	Melt and retain temp., sterilize and retain temp., instrument sterilize, fluid sterilize	
	Additional functions	Power consumption, accumulated power usage, CO ₂ emissions, accumulated power-on time, accumulated operating time, and accumulated times of operations	
Other functions	Key locking, presetting, saving, preheating, forced cooling, sample temperature sensor (option), pattern locking, alarm log saving (20 pcs), display of present time, ON-OFF beeping setting, language switch function (Chinese/Japanese/English) and three-level authorization management system		
Safety device	Sensor failure detection, SSR short-circuit detection, broken heater wire detection, prevention of air burning (liquid expansion type thermostat), alarm against the absence of drain bottle, failure in locking the lid detection, memory error detection, pressure relief valve (0.255 MPa)		
Pressure vessel specification	Class I pressure vessel		
Specification	External dimensions (W×D×H mm)	680×760×997	680×760×1154
	Effective dimensions of chamber (diameter×height mm)	450×535	450×692
	Internal effective capacity of chamber	85L	110L
	Weight	Approx. 145kg	Approx. 170kg
	Power supply (50/60Hz) rated current	AC220V 18.5A	
Accessories	Basket OSQL-90 (diameter 424 × depth 200mm), 2 PCS 1 steam collection cup, 1 cooling water bottle, 1 heater baffle, 1 set of sterilization test cards (30 cards), 1 filter plug, 1m drainage pipe, 1 hose clamp, long-arm clamp (SJL1010C model only)	Basket OSQL-90H (diameter 424 × depth 300), 2 PCS	
Options	Biosafety filtration system, sample temperature sensor, internal chamber temperature measurement sensor, miniprinter, data logger, temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, standard basket, extended height basket		

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Low bed mode

- Convenient retrieval of sterilized items.

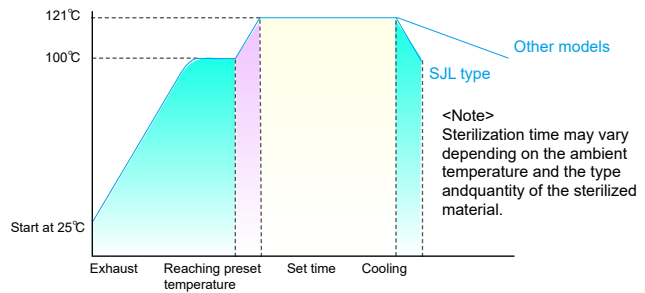


Standard cooling fan

- Cooling fan operates after sterilization.
- Cooling down to safe temperature.
- Reducing the time before samples can be taken out.
- Free to choose the forced cooling or natural cooling.

Comparison of cooling time with other devices

(Initial water temperature: 25°C, Sterilization temperature: 121°C, Ambient temperature: 23°C)



Control panel

- 7-inch color LCD touchscreen with operation in Chinese, English and Japanese



Main screen



Sterilization parameter



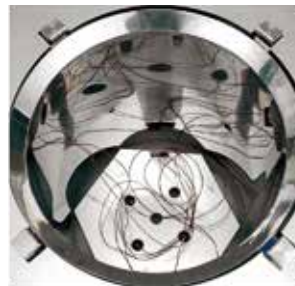
Operation mode selection (instrument sterilization program)



Operation mode selection (melt and retain temp. program)



Sterilization and temp. retain program



Sterilization starts automatically according to sample temperature sensor

The optional sample temperature sensor controls sterilization time based on the temperature of the sterilized material, ensuring effective sterilization.

Comply with GLP/GMP inspection requirements



Equipped as standard with 2 sensor ports on the main unit.



Optional data logger and high performance pressure gauge.

Space-saving top-opening lid design

Require less setup space compared to other machines.

Maximum sterilization temperature of 135°C

Maximum sterilizing temperature goes up to 135°C suitable for protein modification.

Time-saving

Equipped as standard with automatic start and preheat function to improve time efficiency.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Lab Autoclaves | Simple Operations

ST201/301/501/511

Made in
Japan

Operating temp.range	105~123°C(ST201)	105~128°C (ST301/501/511)	Max. working pressure	0.18MPa	0.2MPa	Internal capacity	20L (ST201)	32L (ST301)	47L (ST501/511)
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Fully automatic high-pressure steam sterilization from start to finish.

Features

- Automatic operation from air purging through sterilization via an interactive key-input system.
- Drying temperature can be set according to the sample material, quantity, etc.
- Timer range: 1~999 hours.
- The drain bottle water level can be quickly checked on the front-panel level indicator.
- The drain valve is located at the front for easy access.
- A smooth chamber interior (no protrusions) allows quick and easy insertion and removal of baskets and other items.
- Self-diagnostic functions enhance operational safety and enable faster recovery from errors.
- The condensation collector safely neutralizes high-temperature exhaust steam.



Specifications

Model	ST201	ST301	ST501	ST511
System	Automatic high pressure steam sterilization ¹			
Operating temperature ² (Sterilization)	105 to 123°C	105 to 128°C		
Maximum pressure capacity ²	0.18MPa	0.2MPa		
Interior material	Stainless steel			
Heater	1.3kW	1.7kW		2.0kW
Temp. controller	PID control by microprocessor			
Temp. display	Digital display by green LED and setting by ▲/▼ keys			
Timer / Timer resolution	1 min. ~99 hrs. and 59 min. 100~999 hrs. /1min. or 1 hr.			
Safety device	Self-diagnostic functions (Detection sensor error, SSR short circuit, heater disconnect, faulty main relay, dry operation), safety valve, electric leakage breaker			
Internal dimensions (Dia×Depth)	240×445mm	300×445mm	300×665mm	
External dimensions ³	W410×D470×H957mm	W440×D530×H968mm	W440×D530×H1,088mm	
Internal capacity	20L	32L	47L	
Power supply (50/60Hz single phase) ⁴	AC110/115/120/220/230/240V		AC110/115/120V	AC220/230/240V
Weight	Approx. 60kg	Approx. 75kg	Approx. 80kg	
Accessories	2 pcs. stainless steel mesh basket (Dia.209×D204mm), OSM-60	2 pcs. stainless steel mesh basket (Dia.266×D204mm), OSM-70	2 pcs. stainless steel mesh basket (Dia.266×D315mm), OSM-80	
	Drain board×1, drain bottle×1, condensation collection container with magnetic bracket×1			

The length of the power cord is 2 meters (ST201) and 3 meters (ST301/501/511).

*1 This is not a medical device.

*2 Conditions : Temperature and humidity 23°C±5°C, 65%RH±20% (no load)

*3 Do not include protrusions

*4 Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

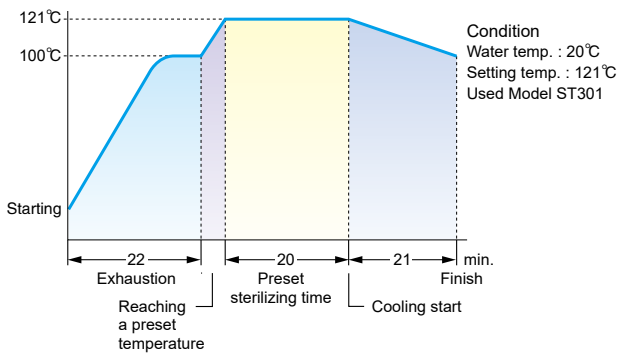
10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

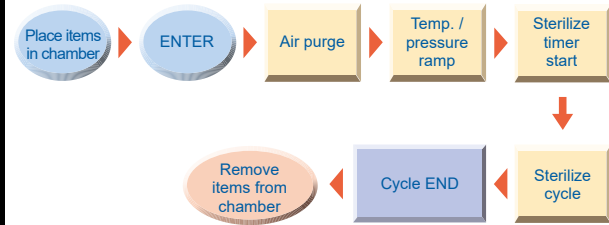
Setting by ▲/▼ keys Self-diagnosis Overcurrent ELB

Outline of sterilization process



Note
Sterilizing time varies, depending on ambient temperature as well as the quality and quantity of the samples subject to sterilization.

Sterilization process



Front door



- Drain bottle placed in front for easy level monitoring and access
- Drain valve also located in front for quick access and operation

Included items



Mesh baskets



Condensation collector

Optional items

No.	Model	Description	Dimension	Corresponding models	Product code
①	OSM-60	Mesh basket Pitch 8.5mm	209x204mm	ST201	241087
②	OSM-70		266x204mm	ST301	241088
③	OSM-80		266x315mm	ST501 / 511	241089
④	OSQ-20	Mesh basket Pitch 8.5mm	250x201mm*	ST301 / 501 / 511	241086
⑤	OSQ-50	Mesh basket with stacking fittings	246x162mm with 3 fittings	ST501 / 511	241091
⑥	OSQ-60	Mesh basket with adjustable stainless steel perforated plate	200x390 with 1 plate	ST201	241096
⑦	OSQ-70		260x390 with 1 plate	ST301	241095
⑧	OSQ-80		270x590 with 2 plates	ST501 / 511	241094
⑨	OSR-10	Stainless solid basket	205x150	ST201	241083
⑩	OSR-20		265x180	ST301 / 501 / 511	241084
⑪	OSM-50	Interior temp. gauging sensor			241076



⑥⑦⑧ Baskets with adjustable stainless steel perforated plate
①~④ Mesh baskets
⑨⑩ Stainless solid baskets
⑤ Baskets with stacking fittings

*2 units can be set for ST301 and 3 units can be set for ST501/511

- Sterilizers **1**
- Granulation and Spray Dryers **2**
- Furnaces **3**
- Ovens **4**
- Incubators **5**
- Plasma Equipment **6**
- Water Purifiers **7**
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- Rotary Evaporators **10**
- Stirrers & Shakers **11**
- Options **12**

Dry Heat Sterilizers | Program Operations

SK401/601/801/811

Made in
Japan

Operating temp. range	RT+5~260°C (SK401/601)	RT+10~210°C (SK801/811)	Temp. control accuracy	±1°C (at 260°C) (SK401/601)	±1°C (at 210°C) (SK801/811)	Internal capacity	99L (SK401)	162L (SK601)	300L (SK801/811)
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Dry-heat sterilization with independent overheat protection.

■ Operation and function

- Programmable operation.
- High-precision controller with improved display visibility and operability.
- Standard features include temperature offset calibration, key lock, power-recovery mode, accumulated power-on/operating time, calendar timer, accumulated power-consumption monitoring, total CO₂ emissions, heater output display, and the ability to save and recall operator settings.
- Up to 99 steps and 99 patterns with repeat operation.
- Easy data collection via the cable port.

■ Safety features

- Standard safety features include self-diagnostic functions, independent overheat protection, and an earth leakage breaker (ELCB).



■ Specifications

Model	SK401	SK601	SK801	SK811
Circulation method	Natural convection		Forced convection	
Temp. setting range	Room temp. +5~260°C		Room temp. +10~210°C	
Temp. control accuracy	±1°C (at 260°C)		±1°C (at 210°C)	
Temp. fluctuation	±1.5°C (at 260°C)		±1°C (at 210°C)	
Temp. distribution accuracy	±5°C (at 260°C)		±3.5°C (at 210°C)	
Temp. rising time	~60min.			
Interior / Exterior material	Stainless Steel / Chrome free electrogalvanized carbon steel sheet coated with chemical-proof baked-on finish			
Insulation Material	Glass wool			
Heater	SUS 1.2kW	SUS 1.36kW	SUS 2.4kW	
Sensor	K type Thermocouple			
Fan type / Fan motor	-		Sirocco Fan / Condenser type motor 30W	
Cable port	I.D. 33mm (right side)			
Exhaust port	I.D. 33mm x 2 (on top)		I.D. 33mm x 2 (back)	
Temperature control	PID control by microprocessor			
Temperature display	Temp. display: Green 4-digit LED Digital Display (increment: 1°C) Setting temp. display: Orange 5-digit LED Digital Display (increment: 1°C)			
Timer	0 min~99 hrs 59 min (increment: 1 min. or 1 hr.)			
Heater control	Triac with Zero-cross control			
Operation function	Fixed temperature, auto start, auto stop, quick auto stop, program (99 steps, 99 patterns, repeat operation function)			
Additional functions	Power on and operation time accumulation function (up to 65535 hours), calendar time (24 hours), calibration offset, accumulated power consumption monitoring, total CO ₂ emission and heater output, power recovery mode, save and access operator setting information, key lock			
Safety device	Self-diagnostic functions (sensor failure, SSR short circuit, heater failure, main relay contact failure, automatic overheat prevention), earth leakage breaker, independent overheat prevention device			
Internal dimensions (WxDxH)	450 x 490 x 450mm	600 x 540 x 500mm	600 x 500 x 1000mm	
External dimensions (WxDxH)	560 x 600 x 820mm	710 x 650 x 870mm	710 x 650 x 1640mm	
Internal capacity	99L	162L	300L	
Shelf plate with standard load	~15kg/pc			
Shelf rest step number / pitch	11 steps / 30mm	13 steps / 30mm	29 steps / 30mm	
Power supply*	AC110/115/120/220/230/240V		AC110/115/120V	AC220/230/240V
Weight	~50kg	~62kg	~108kg	
Shelf plate / bracket	Stainless steel punched metal			
	2 pcs. / 4 pcs.		4 pcs. / 8 pcs.	

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

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7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

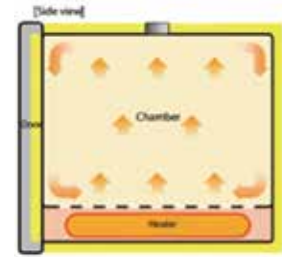
12 Options



Control panel



Method



Cable port



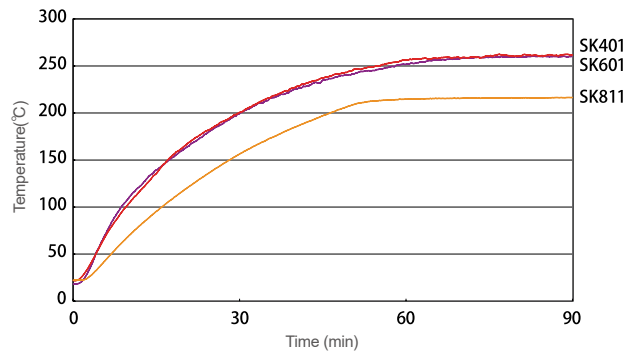
Shelf and bracket set



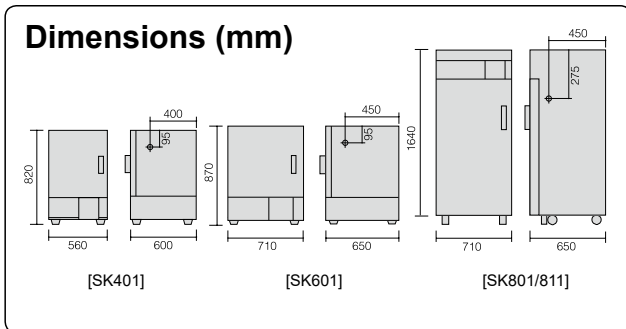
Optional items

Description	Product Code
Stand	
For SK401/601	OA194 281596
For SK401	OA117 281355
For SK601	OA118 281356
Stacking kit	
For SK401	OA119 281357
For SK601	OA120 281358
Shelf and bracket set	
For SK401	ODN20 212246
For SK601/801/811	ODN22 212266
Seismic mat	296902
External communication adapter set	OIN90 211880
*External communication terminal	ODS16 212981
*Temperature output terminal	ODS18 212982
*External alarm output terminal	ODS22 212983
*Timeup output terminal	ODS24 212984
*Operation signal output terminal	ODS26 212985
*Event output terminal	ODS28 212986

Temperature rising curve



*Please specify when ordering main unit.

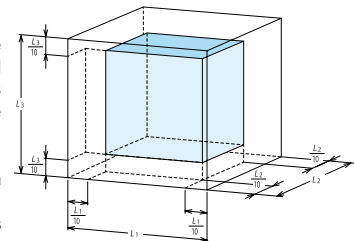


9 Points of distribution reference data (SK811, no load, setting temp. 180°C)

	Top right back	Top left back	Top right front	Top left front	Bottom right back	Bottom left back	Bottom right front	Bottom left front	Center
SK811	186.6	189.2	186.2	188.8	184.9	186.3	183.0	183.5	186.9

Conditions

- 1.9 measurement points are taken from the effective internal capacity down-scale by 10% (as the image on the right) and the center
2. Room Temp. 23 °C , AC115V, 50Hz, stable temperature when temp. setting at 180°C
3. No load, with 2 pcs of shelves



Attention ● Never use in flammable or explosive gas atmosphere.
● Never use explosive or flammable material.

● Caution: High temperature components.

- Sterilizers 1
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- Furnaces 3
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- Incubators 5
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- Options 12

Dry Heat Sterilizers | Dry Heat Sterilization, Natural Convection

SI411C/611C

Max. operating temp. 260°C

Temp. distribution accuracy ±5°C (at 260°C)

Internal capacity 77L 159L

Gravity convection dry heat sterilizer with program function, easy to set.

Features

- Quick, safe and reliable sterilization function.
- Easy operation, available for fixed temp. operation, program operation, quick auto stop, auto stop and auto start operations.
- Use special function menu keys and ▲/▼ keys to realize digital setting. A programmable controller with repeat function and 3 modes.
- Use submenu keys to operate overheat protector, deviation correction and key locking.

Safety

- Equipped with self-diagnostic circuit (temperature sensor error detection, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection switch, key lock and other safety functions.



Specifications

Model		SI411C	SI611C	
System		Natural convection hot air sterilizer		
Performance	Operating temp. range	Room temp. +5~260°C		
	GB standard	Temp. fluctuation	±0.5°C (at 260°C)	
		Temp. uniformity	±3% (at 260°C)	
	JTM standard	Temp. adjusting accuracy	±1.0°C (at 260°C)	
		Temp. distribution accuracy	±5.0°C (at 260°C)	
Max. temp. reaching time		Approx. 70 min		
Composition	Interior material	Stainless steel plate		
	Exterior material	Cold rolled steel plate with chemical proofing coating		
	Insulating material	Glass fiber		
	Heater	Nichrome heating wire		
		1.2kW		1.36kW
	Fan blade/motor	-		
Exhaust vent	I.D. 30mm×2 (top)			
Controllers	Temp. control method	3-stage PID		
	Temp. setting method	Use special function menu keys and ▲/▼ keys to realize digital setting		
	Temp. display method	Measured temp. display: Green 4-digit LED digital display		
		Setting temp. display: Red 4-digit LED digital display		
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)		
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation		
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)		
	Additional functions	Deviation correction, key lock, power outage compensation		
Sensors	K thermocouple (Temp. controller and overheat protector)			
Safety device		Self-diagnostic circuit (temperature sensor error detection, heater disconnection protection, automatic overheating prevention, SSR short-circuit), overheating prevention, overcurrent leakage protection switch, key lock functions		
Specification	Internal dimensions (W×D×H mm)	450×430×400	600×530×500	
	External dimensions (W×D×H mm)	550×540×777	700×640×877	
	Internal capacity	77L	159L	
	Shelf load	15kg/layer		
	Shelf layers	10 layers	13 layers	
	Support spacing	30mm		
	Power supply (50/60Hz) rated current	AC220V 6A	AC220V 6.5A	
Weight	Approx. 42kg	Approx. 59kg		
Accessories	Shelf	Stainless punching mesh plate		
		2 pcs		
	Supports	4 pcs		
Options	Stand	ONS60C		
	Stacking fittings	ODK82C	ODK84C	
	Others	Shelf (1 shelf with 2 supports) micro printer, data logger, combination warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software		

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

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8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Granulation and Spray Dryers

Contents

Spray Dryers	36
Organic Solvent Recovery Units	44
Solvent Washing Units	46

Spray Dryers | Standard

ADL312SC-A

Evaporated water capacity 1500mL/h

Temp. adjustment range 0~240°C

Liquid sending pump flow rate range 0~26mL/min

Nozzle options For liquids-air

New intelligent spray dryer with multiple functions and easy operation.



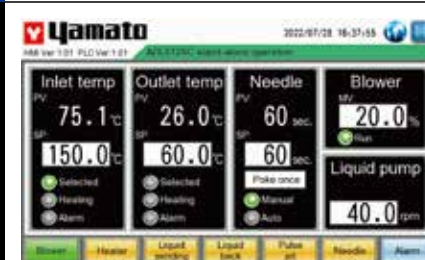
Features

- Adopting the method of instantaneously heating particle samples even if the samples with poor thermal stability are not easily oxidized, and get the uniform fine powder.
- The micro-powder after spraying has low moisture content, will not be oxidized, and no pollution.
- Products are directly dried into fine powder from solution or suspension samples without the need for filtration, separation, grinding, and other pre-processing and post-processing operations associated with traditional drying methods, avoiding contamination.
- It can be connected to the GAS510C organic solvent recovery device to handle samples containing organic solvents.
- The drying chamber and cyclone use a quick assembly and disassembly structure, further improving operability. A standard lift platform is equipped for installing and removing accessories.
- The device is equipped with a power socket for stirrers (200-230V~1A), convenient for stirring the suspension while sampling.
- Use a unique peristaltic sampling pump, nozzle cooling mechanism, pulse nozzle cleaning mechanism, anti-blockage needle, etc., to achieve diversity and stability in spray conditions.

Specifications

Model		ADL312SC-A
Applicable samples		Water-soluble & organic solvent when connected to an organic solvent recovery device
Performance	Moisture evaporation capacity	Max. 1500mL/h
	Temp. regulator setting range	0~240°C (inlet temperature), 0~100°C (outlet temperature)
	Temp. adjusting accuracy	±1°C
	Drying air volume adjustment range	0.12~0.7 m ³ /min
	Spray air flow adjustment range	0~30L/min
	Spray pressure usage range	0.3~0.6MPa
Composition	Nozzle cleaning function	Manual pulse air cleaning from the nozzle front end
	External output	Inlet temperature, outlet temperature output (4~20mA)
	Temp. regulator	Multi-PID control
	Touch screen	Temperature adjustment, blower, heater, liquid feed pump, pulse air switch, automatic needle cleaning, alarm display, operation curve
	Control switch	Selectable inlet temperature or outlet temperature control
	Temp. sensor	PT100 thermistor
	Heater	3.2kW
	Liquid feed pump	Duct type liquid feed pump
	Spray air pump	Spray air compressor(sold separately) or built-in air compressor of organic solvent recovery device(sold separately)
	Service socket	For stirrers: 200-230V~1A
	Suction blower	Brushless blower
	Filters	Suction filter, exhaust filter
	Solvent recovery	Use a solvent recovery device (sold separately)
	Spray nozzle cooling structure	Joints×2, OD Φ10.5mm(connected to a chiller)
Spray air connection	Joint outer diameter, Φ7mm	
Exhaust connection caliber	Φ50mm	
Safety functions		Inlet, outlet temperature overheating, liquid feed pump reverse function, overcurrent leakage protection switch, nozzle connection abnormality
Specifications	External dimensions	W580×D420×H1355mm (stand included)
	Weight	Approx. 96kg
	Power supply	200-230V~50/60Hz 17-20A
Accessories		Liquid feed hose×2, exhaust hose (with 1 hose clamp) ×1, exhaust conversion joint, outlet temperature sensor, fuse, anti-static connection wire, intake hose 5m (with 2 hose clamps), stand components, protective cover (COV20), GF301C glass assembly, exhaust joint, air tube A, air tube B, product warranty, instruction manual

Control panel



- Brand new 7-inch ultra-large touch screen control panel, available in Chinese/Japanese/English, easy and convenient to operate.
- High-power heater greatly enhance the time to reach temperature and the temperature setting range is wider to meet more sample experiments.
- It can switch between two hot air circulation systems: hot air inhalation type and ejection type.
- Both two-fluid nozzles and three-fluid nozzles can be used.
- A new automatic nozzle with a cooling mechanism.
- Remote control is possible (optional).
- Experimental data recording and storage can be realized (optional).

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

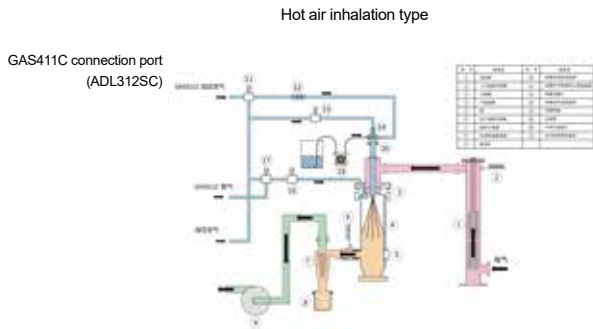
10 Rotary Evaporators

11 Stirrers & Shakers

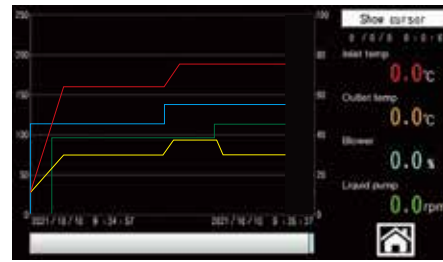
12 Options

CE Certification

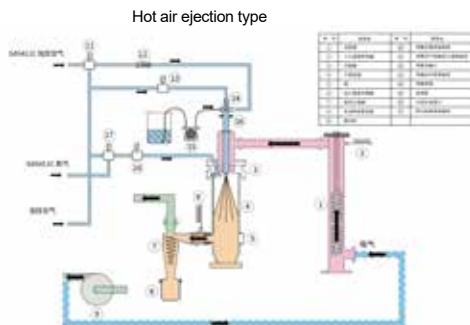
System diagram



Operation



Hot air ejection type connection pipeline



Setting example



Spray dryer ADL312SC+ organic solvent recovery device

Sterilizers	1
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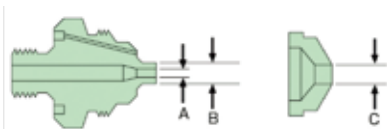
Spray nozzle



The top part of the spray consists of a liquid nozzle and an air nozzle.

Fluid nozzle (F)

Air nozzle (A)



Code	Nozzle size		Nozzle specifications	Applicable models
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	3	ADL312SC/GB211C/DL411C/DL410 (Standard) ADL311(S)/GB210
A080999040	Air cap PA64-SS	Aperture C=1.626mm		
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	2	ADL311(S)/ADL312SC/GB210/ GB211C/DL410/DL411C
A080999029	Air cap PA-70-SS	Aperture C=1.778mm		
A080999034	Fluid cap PF40100-SS	Aperture A=1.016mm Aperture B=2.540mm	6	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		
A080999049	Fluid cap PF60100-SS	Aperture A=1.524mm Aperture B=2.540mm	4	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		

Spray Dryers | Multi-functional

GB211C-A

Evaporated water capacity 1500mL/h

Temp. adjustment range 0~240℃

Liquid sending pump flow rate range 0~26mL/min

Nozzle options For liquids-air

New intelligent spray dryer with multiple functions and easy operation.



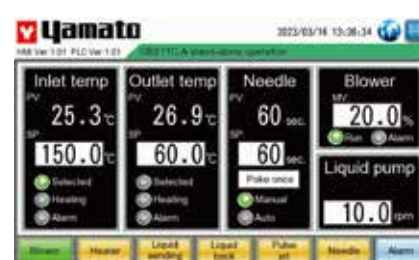
Features

- Instantaneous heating of granular samples ensures that products with poor thermal stability are not oxidized and uniform fine powder can be obtained.
- The micro-powder after spraying has low moisture content, will not be oxidized, and no pollution.
- Products are directly dried into fine powder from solution or suspension samples without the need for filtration, separation, grinding, and other pre-processing and post-processing operations associated with traditional drying methods, avoiding contamination.
- By connecting the organic solvent recovery device, samples containing organic solvents can be professionally and safely handled.
- After installing the optional granulation component GF200, it can be used as a fluidized bed dryer and granulator.
- Equipped with an electric lift, it is convenient for installing and removing attachments.
- Equipped with power socket (1A) for the stirrer, convenient for stirring the suspension while sampling.
- Use a unique peristaltic sampling pump, nozzle cooling mechanism, pulse nozzle cleaning mechanism, anti-blockage needle, etc., to achieve diversity and stability in spray conditions.
- Brand new 7-inch ultra-large touch screen control panel, available in Chinese/Japanese/English, easy and convenient to operate.
- Both two-fluid nozzles and three-fluid nozzles can be used.
- Experimental data recording and storage can be realized (optional function).
- Remote control is possible (optional function).
- Temperature zoning control is adopted, heating up faster and more stable.
- High-power heaters greatly enhance the time to reach temperature and the temperature setting range is wider, meeting more sample experiments.
- Widely used in the development of food, pharmaceuticals, new materials, and sample coating.

Specifications

Model	GB211C-A	
Applicable test material	Water-soluble & organic solvent (when connected to an organic solvent recovery device)	
Performance	Moisture evaporation capacity	Max. 1500mL/h
	Temp. regulator setting range	0~240℃ (inlet temperature), 0~100℃ (outlet temperature)
	Temp. adjusting accuracy	±1℃
	Drying air volume adjustment range	0.12~0.7m ³ /min
	Spray air flow adjustment range	0~30L/min
Composition	Spray pressure usage range	0.3~0.6Mpa
	Nozzle cleaning function	Manual pulse air cleaning from the nozzle front end
	External output	Inlet temperature, outlet temperature output (4~20mA)
	Temp. regulator	Multi-PID control
	Touch screen	Temperature adjustment, blower, heater, liquid feed pump, pulse air switch, automatic needle cleaning, alarm display, operation curve
	Control switch	Inlet temperature, outlet temperature control switch
	Temp. sensor	PT100 thermistor
	Heater	3.2kW
	Liquid feed pump	Duct type liquid feed pump
	Spray air pump	Spray air compressor(sold separately) or built-in air compressor of organic solvent recovery device(sold separately)
	Service socket	For stirrer: 200-230V~1A
	Suction blower	Brushless blower
	Filters	Suction filter, exhaust filter
	Solvent recovery	Use a solvent recovery device (sold separately)
	Spray nozzle cooling structure	Joints X 2, OD Φ10.5mm (connected to a chiller)
Spray air connection	Joint outer diameter, Φ7mm	
Exhaust connection caliber	Φ50mm	
Safety functions	Inlet, outlet temperature overheating, liquid feed pump reverse function, overcurrent leakage protection switch, nozzle connection abnormality (when connected to GAS510C)	
Specifications	External dimensions	W760×D420×H1350mm
	Weight	Approx. 110kg
	Power supply	200-230V~50/60Hz 17-21A
Accessories	Liquid feed hose x2, exhaust hose (with 1 hose clamp) x1, exhaust conversion joint, outlet temperature sensor, fuse, antistatic connection cable, 5m intake hose (with 2 hose ties), nozzle conversion sleeve, stand assembly, protective cover (COV30), GF301C glass components, quick closure, air tube A, air tube B, product warranty, instruction manual	

Control panel



1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

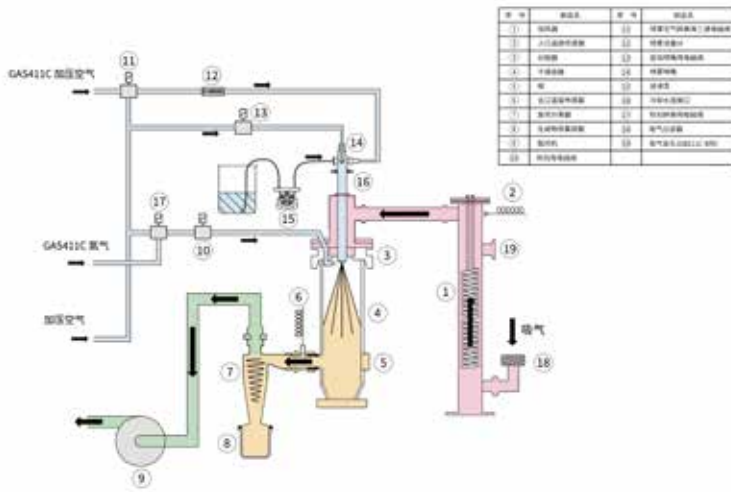
10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

CE Certification

System diagram



Application



- Food and Pharmaceuticals
Milk powder, egg yolk, soy sauce, coffee, starch, protein, hormones, serum, antibiotics, enzyme flavorings, extracts, etc.
- Organic Chemistry
Paraffin, fuels, detergents, surfactants, pesticides, preservatives, synthetic resins, pigments, etc.
- Inorganic Chemistry
Ferrites, ceramics, toner, magnetic tape materials, photosensitive materials, various industrial chemicals, test sample waste liquids, etc.

Operability



The disassembly or cleaning of the drying chamber, cyclone, and product collection container adopts a quick-insert method, making it very convenient.

Organic Solvent Recovery Device GAS510C



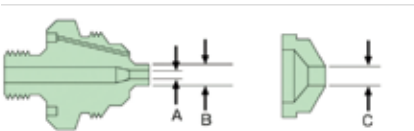
Spray nozzle



The top part of the spray consists of a liquid nozzle and a gas nozzle.

Fluid nozzle (F)

Gas nozzle (A)



Code	Nozzle size		Nozzle specifications	Applicable models
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	3	ADL312SC/GB211C/DL411C/DL410 (Standard) ADL311(S)/GB210
A080999040	Air cap PA64-SS	Aperture C=1.626mm		
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	2	ADL311(S)/ADL312SC/GB210/ GB211C/DL410/DL411C
A080999029	Air cap PA70-SS	Aperture C=1.778mm		
A080999034	Fluid cap PF40100-SS	Aperture A=1.016mm Aperture B=2.540mm	6	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		
A080999049	Fluid cap PF60100-SS	Aperture A=1.524mm Aperture B=2.540mm	4	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		

Repeatability of spray drying tests

Test No.	Sample name	Sample concentration (%)	Drying conditions							Recovered amount (g)	Recovery rate (%)
			Inlet temp. (°C)	Outlet temp. (°C)	Dry air amount (m³/min)	Spray air pressure (Mpa/kg/cm²)	Test sample amount (g)	Sample liquid feed amount (g/min)	Test time (min)		
1	Coffee solution	5.00	150	80	0.45	147(1.5)	198	6.6	30	8.1	81.8
2	Coffee solution	5.00	150	80	0.45	147(1.5)	198.7	6.6	30	8.1	81.5
3	Coffee solution	5.00	150	80	0.45	147(1.5)	200.6	6.7	30	8	79.8
4	Coffee solution	5.00	150	80	0.45	147(1.5)	198.1	6.6	30	8.2	82.8
5	Coffee solution	5.00	150	80	0.45	147(1.5)	199.3	6.6	30	8.4	84.3

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Spray Dryers | Powder Granulating, Drying, Mixing

GB211C-B

Evaporated water capacity 1500mL/h

Temp. adjustment range 0~240°C

Liquid sending pump flow rate range 0~26mL/min

Spray dryer for powder granulation and drying of wet powders, one machine with multi-purpose, save more space.



Features

This device uses a fluidized bed for powder granulation and drying of wet powders. It is a fluidized bed drying and granulating device formed by combining the main unit GB211C with accessory GF200.

The drying chamber is made of ultra-hard glass, allowing observation of the fluidized bed state and spray state. Additionally, it is very convenient for data verification of flow meters, spray pressure gauges, inlet temperature, and outlet temperature. After purchasing the GF301 spray attachment, it can spray as well as fluidized bed granulate, providing strong expandability. It serves multiple purposes, accommodating various experimental objectives, effectively saving laboratory space, and avoiding multiple purchases, thus saving costs.

- 7-inch ultra-large touch screen with options for Chinese/Japanese/English, easy and convenient to operate.
- Automatic lifting function facilitates the installation and removal of the drying chamber.
- Experimental data recording and storage can be realized (optional function).
- Remote control is possible (optional function).
- Temperature zoning control is adopted, heating up faster and more stable.
- High-power heater significantly reduces temperature reaching time and offers the wider temperature setting range, meeting more sample experiments.
- Widely used in the R&D of food, pharmaceuticals, and new materials, as well as sample coating.

Specifications

Model		GB211C-B
Performance	Moisture evaporation capacity	Max. 1500mL/h
	Temperature regulator setting range	0~240°C (inlet temperature), 0~100°C (outlet temperature)
	Temp. adjusting accuracy	±1°C
	Drying air volume adjustment range	0.12~0.7m ³ /min
	Spray air flow adjustment range	0~30L/min
	Spray pressure usage range	0.3~0.6Mpa
Composition	Nozzle cleaning function	Manual pulse air cleaning from the nozzle front end
	External output	Inlet temperature, outlet temperature output (4~20mA)
	Temperature regulator	Multi-PID control
	Touch screen	Temperature adjustment, blower, heater, liquid feed pump, pulse jet switch, automatic needle cleaning, alarm display, operation curve
	Control switch	Inlet temperature, outlet temperature control switch
	Temperature sensor	PT100 thermistor
	Heater	3.2kW
	Liquid feed pump	Duct type liquid feed pump
	Spray air pump	Use spray air compressor (sold separately)
	Service socket	For stirrer: 200-230V~1A
	Suction blower	Brushless blower
	Filters	Suction filter, exhaust filter
	Spray nozzle cooling structure	Joints×2, OD Φ10.5mm (connected to a chiller)
	Spray air connection	Joint outer diameter, Φ7mm
	Exhaust connection caliber	Φ50mm
Safety functions	Overheating at inlet and outlet temperatures, liquid feed pump reverse function, overcurrent and leakage protection switch, abnormal nozzle connection	
Specifications	External dimensions	W760×D420×H1350mm
	Weight	Approx. 110kg
	Power supply (50/60Hz) rated current	200-230V~ 50/60Hz 17-21A
Accessories	2 liquid feed hoses, 1 exhaust hose (with 1 hose tie), exhaust conversion joint, outlet temperature sensor, fuse (250V 2A), antistatic connection cable, 5m intake hose (with 2 hose ties), nozzle conversion sleeve, stand assembly, protective cover (COV30), GF200 glass components	

Control panel



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2 Granulation and Spray Dryers

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4 Ovens

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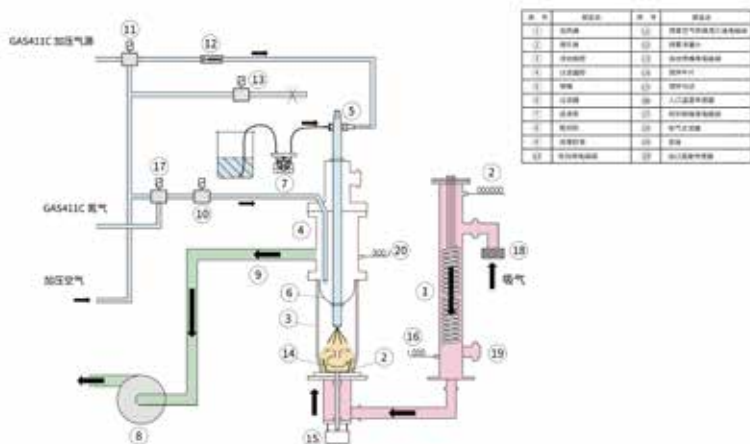
10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

CE Certification

System diagram



Application



- Granulation, drying, mixing of powders
- Pharmaceuticals, food, catalysts, fuels, detergents, ceramics, etc.
- This equipment is applicable to samples within the range of 50g to 300g, and is particularly suitable for handling high-value samples or research-level experiments.

Operability

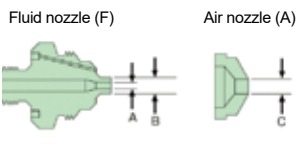


The disassembly or cleaning of the drying chamber, cyclone, and product collection container adopts a quick plug-in method, which is very convenient.

Spray nozzle



The top part of the spray consists of a liquid nozzle and an air nozzle.



Code	Nozzle size		Nozzle specifications	Applicable models
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	3	ADL312SC/GB211C/DL411C/DL410 (Standard) ADL311(S)/GB210
A080999040	Air cap PA64-SS	Aperture C=1.626mm		
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	2	ADL311(S)/ADL312SC/GB210/ GB211C/DL410/DL411C
A080999029	Air cap PA70-SS	Aperture C=1.778mm		
A080999034	Fluid cap PF40100-SS	Aperture A=1.016mm Aperture B=2.540mm	6	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		
A080999049	Fluid cap PF60100-SS	Aperture A=1.524mm Aperture B=2.540mm	4	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		

Implementation case

Sample		Adhesive			Measurement conditions					Results	
Name	Weight (g)	Name	Concentration (%)	Spray amount (g)	Inlet temp. (°C)	Liquid feed amount (g/min)	Spray air flow rate (L/min)	Spray times	Nozzle height (cm)	Average particle size* (µm)	Recovery rate (%)
Silicon	200	PVA	5.0	77	125	15	8	4	27	339	58
Iron oxide	160	PVA	2.5	50	120	15	10	4	21	205	62
Ceramics	200	PVA	3.0	106	120	15	9	3	22	404	82
Aluminum oxide	160	PVA	3.0	60	110	15	8	4	22	311	88
Silicon dioxide	150	CMC	1.0	100	120	15	9	4	22	306	60
Lactose	200	Sorbitol	70.0	10	100	14	10	4	25	390	80
Black tea extract	250	Thickener	0.5	24	85	6	8	10	28	333	77
Oil-containing powders	200	Glucose	30.0	11	85	4	8	7	22	236	82

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Spray Dryers | Large Capacity

DL411C

Evaporated water capacity 3000mL/h

Temp. adjustment range 0~300°C

Liquid sending pump flow rate range 0~70mL/min

Brand-new upgraded large spray dryer that efficiently recovers 100µm micro-particles.



Features

This device can obtain 40~100µm micro-particles, which are considered very difficult to obtain on laboratory spray dryer devices.

Purposes of this device: It can be used in production preparatory experiments, high-value sample experiments, capsule spray drying method application research, and as an alternative method to traditional drying methods in general laboratories.

- It adopts a high-efficiency two-fluid nozzle spray method and a large drying chamber, compared with other products, the sample adhesion amount in the DL411C drying chamber is less, and the drying chamber is designed with a special cold air inlet to effectively prevent spray particles from refluxing and adhering upwards.
- The large hard glass drying chamber is very convenient for observing the spray and particles status.
- The nozzle head can automatically perform pulse cleaning at set intervals.
- The wide range of temperature settings for the hot air inlet can improve processing capacity and experimental efficiency.

Specifications

Model		DL411C	
Applicable samples		Water-soluble & organic solvent (when connected to an organic solvent recovery device)	
Performance	Moisture evaporation capacity	Max. 3000mL/h	
	Spray method	Two-fluid nozzle method (sieve aperture 0.7mm), three-fluid nozzle method (optional)	
	Spray and hot air contact method	Vertical downward spray and flow method	
	Liquid feed pump	Adjustable from 0 to 70 mL/min	
	Temp. regulator setting range	0~300°C (inlet temperature), 0~100°C (outlet temperature)	
	Temp. adjusting accuracy	±1°C	
	Drying air volume adjustment range	0.13~1.0m ³ /min	
	Spray air flow adjustment range	0~30L/min	
	Spray pressure usage range	0.5~0.6Mpa	
Composition	Drying chamber	Size	Internal diameter 457×height 975 mm (glass part)
		Material	The drying chamber, cyclone unit, and product container are made of ultra-hard glass; other piping materials are stainless steel and silicone
	External output		Inlet temperature, outlet temperature output (4~20mA)
	Temp. regulator		Multi-PID control
	Touch screen		Temperature regulation, blower, heater, liquid delivery pump, pulse jet switch, automatic needle cleaning, alarm display, and operational curve
	Control switch		Inlet temperature, outlet temperature control switch
	Temp. sensor		PT100 thermistor
	Heater		2.0kW×2
	Spray air pump		Spray air compressor (sold separately) or built-in air compressor of organic solvent recovery device (sold separately)
	Service socket		For stirrer: 200-230V~1A
	Suction blower		Brushless blower
	Filters		Suction filter, exhaust filter
	Solvent recovery		Using solvent recovery device GAS510C (sold separately)
	Spray nozzle cooling structure		Joints×2, OD Φ10.5mm (connected to a chiller)
Spray air connection		Joint outer diameter, Φ7mm	
Exhaust connection caliber		Φ50mm	
Safety functions		Overheating at inlet and outlet temperature, liquid delivery pump reverse function, overcurrent leakage protection switch, independent overheating preventer for the outside of the heater	
Specifications	External dimensions		W1080×D850×H1770mm
	Weight		Approx. 180kg
	Power supply		200-230V~50/60Hz 23-27A
Accessories		See Accessory list for details	

The large size of the drying chamber allows the equipment to provide sufficient time for drying fine particles, thus enabling the production of particles ranging 40~100 µm, similar to products manufactured in industries such as ceramics and pharmaceuticals.

- 7-inch ultra-large touch screen with options for Chinese/Japanese/English, easy and convenient to operate.
- The cover of the drying chamber can be raised and rotated, facilitating easy cleaning.
- The system is equipped with a new automatic nozzle featuring a cooling mechanism.
- Both two-fluid and three-fluid nozzles can be used.
- Experimental data recording and storage can be realized.
- Remote control is possible (optional function).
- Temperature zoning control is adopted, heating up faster and more stable.
- A service socket is provided for easy power supply to the stirrer.

Configuration



The cyclone separation unit is equipped with a safety cover to prevent burns and an anti-static brush.

Filtering device



When installed at the air inlet, it effectively filters out particulate impurities from the incoming air, preventing contamination of the spray sample.
When installed at the exhaust port, it can effectively filter uncollected sample matter for secondary recovery purposes.

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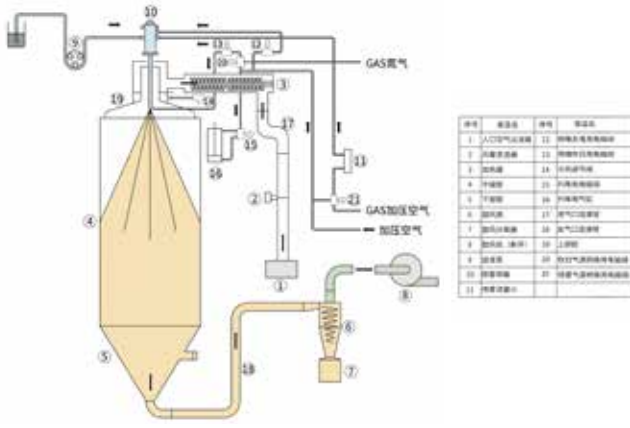
10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

CE Certification

System diagram



Application cases

① Powder & Particle

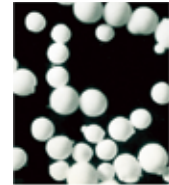
Through granulation and spheroidization processing, the flowability of powders is significantly enhanced, allowing for uniform filling during compaction. For this purpose, it is used in aluminum, zirconium, various ceramics, precious metals, super hard alloys, etc.

② Microencapsulation

Mixing and adjusting core substances and membrane materials during spray drying results in encapsulated powder from the primary solution.

[Application Case]

- Ink powder for carbonless copy paper
- Flavor adjustment for pharmaceuticals, adjusting solubility time
- Microencapsulation of fragrances for pharmaceuticals or hygiene-related products
- Microencapsulation of other pigments, fertilizers, oils, adhesives, etc.



0 50 100µm

Powder generated by DL411C

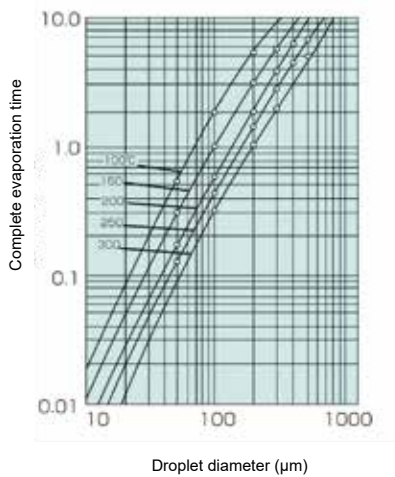
③ Spray cooling granulation

Wax, oils, fatty acids, etc. which are difficult to dry and powdered.

④ Special application cases

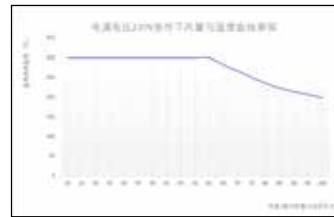
Spray concentration, spray reaction, powder granulation, etc.

Drying time



Drying time for complete evaporation of droplets at various hot air temperatures

Airflow and temperature usage curves

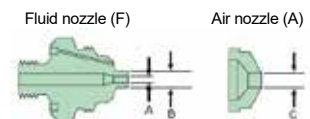


Control panel



Spray nozzle

Code	Nozzle size		Nozzle specifications	Applicable models
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	3	ADL312SC/GB211C/DL411C/DL410 (Standard) ADL311(S)/GB210
A080999040	Air cap PA64-SS	Aperture C=1.626mm		
A080999031	Fluid cap PF2850-SS	Aperture A=0.711mm Aperture B=1.270mm	2	ADL311(S)/ADL312SC/GB210/ GB211C/ DL410/DL411C
A080999029	Air cap PA-70-SS	Aperture C=1.778mm		
A080999034	Fluid cap PF40100-SS	Aperture A=1.016mm Aperture B=2.540mm	6	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		
A080999049	Fluid cap PF60100-SS	Aperture A=1.524mm Aperture B=2.540mm	4	ADL312SC/GB211C/DL410/DL411C
A080999035	Air cap PA120-SS	Aperture C=3.048mm		
A080999039	Fluid cap PF100150-SS	Aperture A=2.530mm Aperture B=3.810mm	5	DL410/DL411C
A080999041	Air cap PA180-SS	Aperture C=4.572mm		



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Organic Solvent Recovery Units | N₂ Closed Cycle

GAS510C

Circulating airflow 0.12~0.65m³/min

Recovery capacity Above 3000mL/h

Brand new upgraded organic solvent recovery circulation system.



■ Features

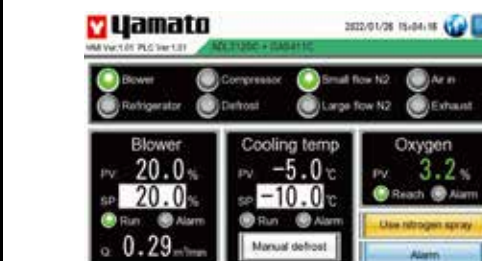
When using organic solvents in the spray dryer ADL312SC, GB211C-A, DL411C, this recovery unit is used to prevent external discharge.

- Through a nitrogen closed-loop cycle and using a refrigerator and condenser for solvent recovery, it enables the handling of combustible materials.
- It can dry easily oxidizable substances.
- Due to low-temperature drying capabilities, it can also dry materials prone to thermal deformation.
- Under stringent safety measures, spray drying allows for the recovery of products and solvents.

■ Specifications

Model	GAS510C		
Solvent recovery method	Condensation recovery		
Performance	Circulating gas	Nitrogen replacement + closed loop	
	Condensation temp. setting range	-20~30℃	
	Circulating airflow	0.12~0.65 m ³ /min	
	Compressed air source flow	32L/min	
Composition	Air compressor (for spraying)	Oil-free piston compressor	
	Circulation fan	Roots blower	
	Solvent recovery container	2L flask (with anti-fall flask holder)	
	Refrigerator	Air-cooled fully sealed refrigeration unit, 735W R404A	
	Solution recovery container	Double condenser cooling structure	
	Filters	Class 100 high-efficiency filter (corrosion-resistant type)	
	Control panel	Condensation temperature control and display	
		Blower output power display	
		Real-time oxygen concentration	
		Switching of spray air sources	
Oxygen concentration meter	0.1~25% Vol		
Micro pump	Pump suction type oxygen sensor monitoring		
Safety functions	Oxygen concentration upper limit alarm, flammable gas leakage alarm, overcurrent protection switch, nitrogen forced introduction (when oxygen concentration rises)		
Specifications	External dimensions	W710×D950×H1450mm	
	Weight	240kg	
	Power supply (50/60Hz) rated current	200-230V~50/60Hz 5.5-12A	
Accessories	Liquid delivery hoses (2 each of silicone and Viton), 2 stainless steel corrugated hoses, PVC exhaust pipe, connecting pipes, recovery flask (2L)		

■ Control panel



- Brand new 7-inch ultra-large touch screen control panel, available in Chinese/Japanese/English, easy and convenient to operate.
- It can communicate with the control panel of the spray dryer.
- It can automatically select the spray air source.
- Remote control is available (optional).
- All parts have status indicators.
- Circulating airflow display (optional).
- Main functions

- ① Closed system (nitrogen closed-loop type)
- ② Oxygen concentration control function
- ③ Flammable gas detection function
- ④ Diagnosis for abnormal condensation temperature
- ⑤ Other self-diagnosis functions (temperature sensor disconnection detection/ abnormal oxygen concentration detection/nozzle removal detection)

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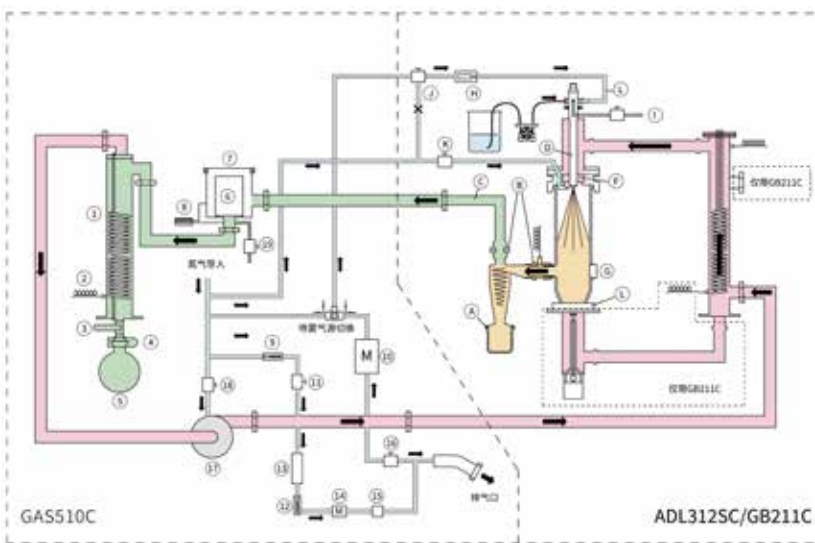
10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

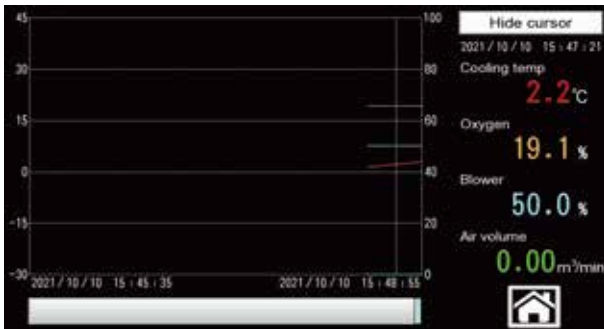
CE Certification

System diagram



No.	Part name	No.	Part name
1	Evaporators	A	O-rings
2	Sensors	B	Seal rings
3	Ball valves	C	Corrugated tubes
4	Flask holders	D	Spray nozzle
5	Recovery flasks	E	Coiled tubes
6	Filters	F	Aluminum honey-comb rectifiers
7	Filter chambers	G	Safety cover
8	Differential pressure gauges	H	Pressure gages
9	Flow meter (for N ₂ introduction)	I	Push pin valve
10	Compressor	J	Three-way valve
11	Electromagnetic valve (for N ₂ control)	K	Electromagnetic valve
12	Flow meter (for O ₂ concentration)	L	Seal rings
13	Activated carbon filter		
14	Pump		
15	O ₂ Sensors		
16	Electromagnetic valve (for exhaust)		
17	Blower		
18	Electromagnetic valve (for N ₂ introduction)		
19	Electromagnetic valve (for air inlet)		

Operation curve



Applicable organic solvents reference

Selection of liquid delivery hoses

Silicone hose: Ethanol, IPA, Methanol, Acetone, Ethyl Acetate

Viton hose: Xylene, Toluene, Benzene, Ethane, Chloroform, Dichloromethane

[Boundary oxygen concentration table]

Organic Solvent	Boiling Point [°C]	Melting Point [°C]	Boundary Oxygen Concentration [%]
Xylene	(o):144	(o):25	(o):10.5
IPA	82.3	-88	9.0
Benzene	80.1	5.5	10.5
Ethanol	78.4	-114.3	9.9
Ethyl Acetate	77.1	-83.6	10.0
Ethane	67.7	-95.3	11.4
Methanol	64.6	-97.4	9.7
Chloroform	61.2	-63.5	Non-flammable
Acetone	56.2	-94.6	10.4
Dichloromethane	40.0	-97.7	23.9

Usage objects and fields



- Non-oxide ceramics related
- Polymer materials related
- Superconducting materials related
- Pharmaceuticals related
- Food-related

Circulation & airflow monitoring meter (optional)



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Solvent Washing Units | Corrosive Solvent Wet Washing

GWS410

Maximum flow rate 15L/min

The world's first solvent washing unit, mainly used for exhaust gas treatment of spray dryers.

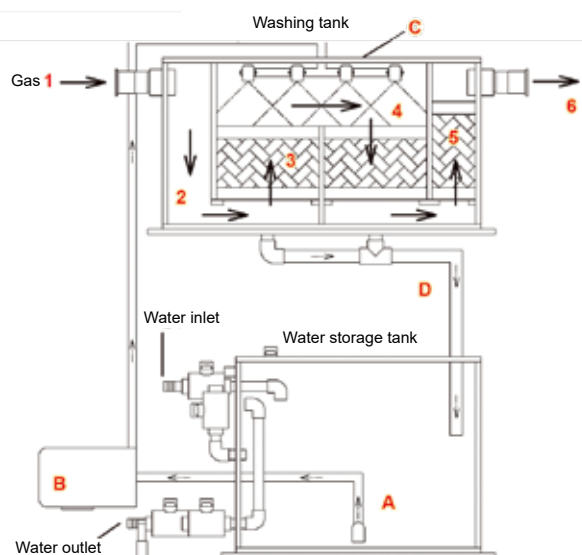


GWS410 captures pollutants in harmful gases using water or alkaline solution at atmospheric pressure and room temperature. GWS410 is designed with a washing tank—when solvent vapors enter the washing tank, sprayed water adheres, cleans, and neutralizes solvent particles, the treated liquid then returns to the bottom of the tank.

Features

- Using water or alkaline solution.
- Eliminate highly irritating solvents.
- Reduce rust and corrosion of equipment.
- Easy to operate.
- Easy to maintain—just monitor the pH level of water in the water storage tank and the state of the molecular sieve.

System diagram

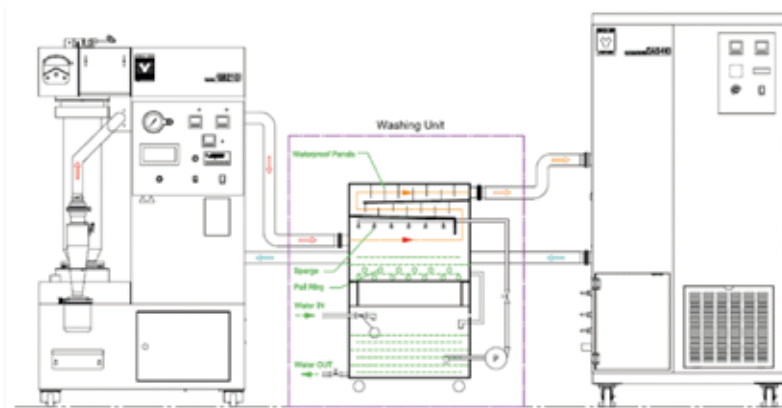


Specifications

Model	GWS410
System	Flow-type spraying washing type
Circulating liquid	Water/alkaline solution
Circulation pump	Small magnetic circulation pump
Maximum flow rate	15L/min
Maximum lift	8m
Harmful gas cleaning method	Pall ring filling + spraying washing
Water storage tank capacity	35L
Safety device	Leakage protection circuit breaker
Power supply	200-230V~0.35-1.0A
Dimensions (WxDxH)	800×500×1230 mm
Weight	Approx. 120kg

*Dimensions do not include protrusions.

Connection diagram



Spray Dryer + GWS410 Organic Solvent Washing Unit + Organic Solvent Recovery Device

- (1) Harmful gases exiting the spray dryer ① enter the washing tank unit.
- (2) Through the cleaning tank unit ②, harmful gases come into contact with the filling material ③ and the cleaning liquid ④ that is sprayed from the nozzle, allowing harmful substances to be neutralized by the cleaning liquid.
- (3) Through multiple filling chambers, the gas passes through the smoke collector ⑤ to prevent the cleaning liquid from being discharged.
- (4) The gas, under the influence of the fan, enters the organic solvent recovery device as clean air exhaust ⑥.
- (5) Cleaning liquid A enters the washing tank from the water storage tank through circulation pump B, is dispersed onto the filling material ③ via spray nozzle C, and returns to the water storage tank's circulating water tank through piping D.

Reference materials

Spray drying-spray dryers for organic solvents

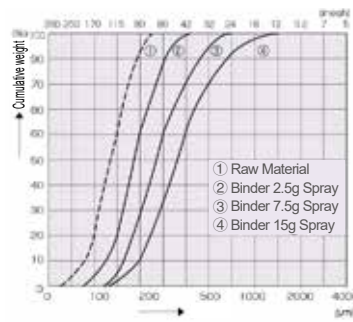
Sieve hole	# 1	# 2	# 3	# 4
Above 12	5.6	0.8	1.2	1.3
12~16	0.5	0.9	1	1.2
16~24	0.6	0.8	1.2	1.4
24~32	0.7	0.8	0.9	1.1
32~42	1.6	1.7	1.9	1.8
42~60	5.9	4.3	4.8	3.5
60~80	9.6	8.5	8.5	6.6
80~115	13.2	15.6	13.4	12.8
Below 115	66.8	66.6	67	70.3
Average particle diameter※	135.6	135.7	138.3	136.9

Repeatability of granulation test
Due to the numerous operational factors of the mini spray granulation method, the repeatability may vary depending on the operator's skill level. Since the flow state of the particles can greatly affect the test results, adjusting the hot air volume is typically done to achieve consistent flow conditions.

Conditions

Raw material	Sintered Alumina (Average particle size 40) 400g
Binder	5% PVA solution (#500) 25g
Inlet temperature	100°C
Binder delivery speed	12.4g/min
Binder spray times	6 times
Binder spray pressure	78KPa (0.8kg/cm ²)
Nozzle height	Distance from micropore plate 25cm

Particle size variation

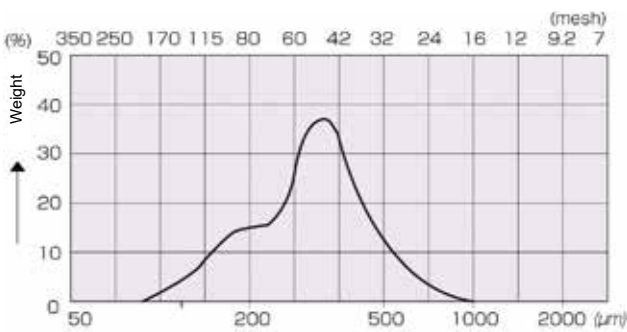


Factors influencing particle size variation include inlet temperature, binder delivery speed, spray pressure, etc., but the greatest influence comes from the amount of binder added relative to the amount of raw material powder. As the binder amount increases, the particle size will naturally increase.

Conditions

Raw material	Lactose (Below 100 sieve hole) 200g
Binder	70% sorbitol solution
Inlet temperature	90°C
Binder delivery speed	12g/min
Binder spray pressure	98KPa (1.0kg/cm ²)
Nozzle height	Distance from micropore plate 25cm

Repeatability of granulation test



Particles generated by the granulation device typically range in distribution from 0.1 to 1.5µm; they do not achieve a uniform particle size like those produced by extrusion or compression granulation methods, but this size range can be adjusted to some extent based on experimental conditions, etc.

Conditions

Raw material	Lactose (Below 100 sieve hole) 200g
Binder	70% sorbitol solution 7.3g
Inlet temperature	90°C
Binder delivery speed	12g/min
Binder spray times	7 times
Binder spray pressure	98KPa (1.0kg/cm ²)
Nozzle height	Distance from micropore plate 22.5cm

Implementation cases (spray dryer ADL312SC-A)

Sample	Composition (%)	Inlet temp. (°C)	Outlet temp. (°C)	Dry air amount (m ³ /min)	Spray air flow rate (L/min)	Sample liquid feed amount (g)	Sample recovery rate (%)
Dextrin (solution)	10	150	80	0.4	10	6.1	66
Dextrin (emulsion)	40	150	80	0.4	10	5.1	63
Titanium dioxide (suspension)	10	150	85	0.42	10	5.3	50
Soy sauce	50	130	75	0.36	10	5.1	60
Salt	10	145	85	0.38	10	5.3	52

Repeatability of spray drying tests (spray dryer ADL312SC-A)

Test No.	Sample	Composition (%)	Drying conditions							Recovery amount (g)	Recovery rate (%)
			Inlet temp. (°C)	Outlet temp. (°C)	Dry air amount (m ³ /min)	Spry air flow rate (L/min)	Test sample amount (g)	Sample liquid feed amount (g)	Test time (min)		
1	Coffee solution	5.00	150	75	0.45	11.5	93.1	3.1	30	4.3	92.4
2	Coffee solution	5.00	150	75	0.45	11.5	93	3.1	30	4	86.0
3	Coffee solution	5.00	150	75	0.45	11.5	91.4	2.0	30	4	87.5
4	Coffee solution	5.00	150	75	0.45	11.5	84.9	2.8	30	3.7	87.2
5	Coffee solution	5.00	150	75	0.45	11.5	83.8	2.8	30	3.7	88.3

Implementation cases (spray dryer GB211C-A)

Sample	Composition (%)	Inlet temp. (°C)	Outlet temp. (°C)	Dry air amount (m ³ /min)	Spray air flow rate (L/min)	Sample liquid feed amount (g)	Sample recovery rate (%)
Dextrin	20% Solution	140	85	0.48	11.5	8.8	60
Pharmaceutical	10% suspension	145	80	0.42	12.5	8.2	82
Black tea extract	20% solution	155	100	0.4	11.5	7.8	72
Silica gel	20% solution	150	75	0.48	11.5	12.6	70
Iron oxide	3% suspension	175	90	0.4	10.5	9.5	75

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- Water Purifiers 7
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Implementation cases (granulation equipment GB211C-B)

Sample		Adhesive			Measurement conditions					Results	
Name	Weight (g)	Name	Concentration (%)	Spray amount (g)	Inlet temp. (°C)	Liquid feed amount (g/min)	Spray air flow rate (L/min)	Spray times	Nozzle height (cm)	Average particle size* (μm)	Recovery rate (%)
Silicon	200	PVA	5.0	77	125	15	8	4	27	339	58
Iron oxide	160	PVA	2.5	50	120	15	10	4	21	205	62
Ceramics	200	PVA	3.0	106	120	15	9	3	22	404	82
Aluminum oxide	160	PVA	3.0	60	110	15	8	4	22	311	88
Silicon dioxide	150	CMC	1.0	100	120	15	9	4	22	306	60
Lactose	200	Sorbitol	70.0	10	100	14	10	4	25	390	80
Black tea extract	250	Thickener	0.5	24	85	6	8	10	28	333	77
Oil-containing powders	200	Glucose	30.0	11	85	4	8	7	22	236	82

Types and features of binders (reference materials)

Type	Features
Gelatin	Low concentration solutions have weaker adhesion, so high concentration solutions should be heated before spraying.
Dextrin	Although the adhesive strength is weaker, it forms very well during tablet pressing.
Potato Starch	Good particle properties and inexpensive, used in medical and food fields.
Sodium Alginate	Due to high viscosity, it is very suitable as a binder.
Arabic Gum	Need to be sprayed after heating, requires a large amount of binder.
CMC (Carboxymethyl Cellulose)	High viscosity at low temperatures, leading to more powder residue.
HPC (Hydroxypropyl Cellulose)	Suitable for hygroscopic materials with good cohesiveness.
MC (Methyl Cellulose)	Strong adhesive power, suitable for products that increase particle size.
PVA (Polyvinyl Alcohol)	Although it is very good in granulation, it has some difficulty in crushing granulated products.
PVP (Polyvinylpyrrolidone)	High molecular weight substances have strong adhesion, suitable for hydrophobic materials.

Repeatability of spray drying tests (spray dryer GB211C-A)

Test No.	Sample	Sample concentration (%)	Drying conditions							Recovery amount (g/min)	Recovery rate (%)
			Inlet temp. (°C)	Outlet temp. (°C)	Dry air amount (m³/min)	Spray air flow rate (L/min)	Test sample amount (g/min)	Sample liquid sending amount (g/min)	Test time (min)		
1	Coffee solution	5.00	150	80	0.45	11.5	198.0	6.6	30	8.1	81.8
2	Coffee solution	5.00	150	80	0.45	11.5	198.7	6.6	30	8.1	81.5
3	Coffee solution	5.00	150	80	0.45	11.5	200.6	6.7	30	8.0	79.8
4	Coffee solution	5.00	150	80	0.45	11.5	198.1	6.6	30	8.2	82.8
5	Coffee solution	5.00	150	80	0.45	11.5	199.3	6.6	30	8.4	84.3

Implementation cases Combination of granulation equipment with organic solvent recovery device (for organic solvent)

Sample	Composition (%)	Inlet temp. (°C)	Outlet temp. (°C)	N ₂ amount (m³/min)	Spray air flow rate (L/min)	Liquid sending speed (g/min)	Dispersed enzymes or solvents	Result			Others
								Powderization	Recovery rate (%)	Solvent recovery rate (%)	
HPMC	10.0	90	55	0.5	10	9.9	Remark※	Excellent	65.3	92.5	※THMs 1:Ethanol 1
Cellulose-based polymer	5.0	70	47	0.5	10	8.3	DCM	Excellent	72.3	72.3	
Polymeride	2.0	100	64	0.5	10	8.4	Remark※	Excellent	77.8	80.7	※Ethanol 95: Water 5
Resin	23.5	80	55	0.5	10	4.2	Remark※	Excellent	81.9	96.7	※Disperse to (Methanol 4: Water 1)
Carbon+Resin	5.8	100	70	0.5	10	5.3	IPA	Excellent	85.1	94.1	
Polymeride+Inorganic salt	10.2	140	98	0.5	10	3.8	Remark※	Excellent	97.6	97.4	※DMAC
PVP (K30)	10.0	80	55	0.5	10	7.7	Ethanol	Excellent	79.4	95.0	
PVP+Medicine	10.0	80	70	0.5	10	7.7	Ethanol	Excellent	75.9	95.4	
Plant extract	3.0	130	71	0.5	10	9.1	Remark※	Excellent	96.5	91.9	※Ethanol 6: Water 4
Carborundum	38.5	150	84	0.5	10	12.1	Ethanol	Excellent	89.9	99.9	※Nozzle 3S
AIN	13.2	150	99	0.5	10	12.9	BAC	Excellent	92.2	86.7	※Nozzle 3S
Nitrogen ceramics	60.5	120	83	0.5	10	11.3	MEK	Excellent	74.7	88.7	
Superconducting material	33.3	80	60	0.5	10	15.7	Acetone	Excellent	66.6	99.6	
Medicine	3.61	100	68	0.6	10	10.0	Remark※	Good	73.6	87.2	※Ethanol+DCM
Medicine	13.2	60	45	0.32	10.5	6.0	Remark※	Good	87.6	94.7	※DCM+Ethanol
W-Cu	50.0	100	62	0.5	8	20.7	Ethanol	Good	60.3	91.9	
MPS	48.7	140	60	0.45	10	22.3	Water	Good	67.6	91.7	
Polymeride	0.5	150	88	0.5	10	8.5	Remark※	Good	83.1	97.6	※Ethanol 3+Water 1
Organics	50.0	150	88	0.4	10	8.3	Methanol	Good	/	/	
Silica dispersion solution	10.0	100	88	0.5	10	4.8	Remark※	Good	96.2	99.5	※Ethanol+Water(little)

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Electric Furnaces | Standard

FO101C/111C/201C/211C/301C/311C/411C/511C/611C/711C/811C

Operating temp. range	100~1150°C	Temp. adjusting accuracy	±2°C	Internal capacity	1.5L	3.75L	7.5L	9L	11.3L	17.5L	23.6L	30L
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8 types of internal capacity, equipped with program operation function.

Features

- Support program operation.
- Simple operation with up/down key settings, equipped with a high-operability controller for precise temperature control.
- Temperature, time and indicator values can all be displayed digitally.
- Use a controller with integrated digital settings and overheat protection. Support self-diagnosis functions, overcurrent leakage protection switch and other safety controls in case of anomalies.
- Use R-type thermocouple for long life.
- Equipped with an exhaust port.
- Optional features available, such as exhaust unit, sample trays, nitrogen gas introduction device (with flow meter), temperature output terminal and so on.



Specifications

Model		FO101C	FO111C	FO201C	FO211C	FO301C	FO311C	FO411C	FO511C	FO611C	FO711C	FO811C										
Performance	Operating temp. range	100~1150°C																				
	Temp. adjusting accuracy	±2°C (at 1150°C)																				
Composition	Time to reach maximum temp. at room temp.	Approx. 60 min				Approx. 70 min			Approx. 80 min													
	Exterior material	Double-sided galvanized steel sheet, with surface paint treatment																				
	Furnace body	Ceramic fiber																				
	Sensors	Dual R-type thermocouple																				
Controllers	Heater	Iron-chromium-aluminum alloy electric heating wire heater			1kW			1.5kW		2kW		2.2kW		2.5kW		3kW		3.5kW		4kW		
		Exhaust vent											Inner diameter 20mm, upper part									
	Cooling fan blade											Axial flow fan										
	Temp. control method											The heater output is controlled using a microcomputer PID controller										
	Temp. setting/display											Digital setting through function menu key and ▲/▼ keys										
	Overheating protection											Integrated controller										
	Overheat protection setting method											Digital setting										
	Operation functions											Fixed temp. operation, program operation, auto start, quick auto stop, auto stop, programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)										
	Additional functions											Deviation correction function, power failure compensation function, key lock function										
	Timer											1 min~99 h 59 min and 100~999 h 50 min (including timer function)										
Safety device											Self-diagnostic: Temperature sensor malfunction, display malfunction, automatic overheat prevention malfunction, measured temperature malfunction, leakage protection switch, overheat prevention device (controller integrated electronic type)											
Specifications	Internal dimensions (W×D×H mm)	100×150×100			100×250×150			200×250×150		200×300×150		300×250×150		250×350×200		270×350×250		300×400×250				
	External dimensions (W×D×H mm)	346×405×517			346×505×567			446×505×567		446×555×567		506×505×627		506×605×677		506×605×727		506×655×727				
	Internal capacity	1.5L			3.75 L			7.5 L		9 L		11.3 L		17.5 L		23.6 L		30 L				
	Power supply (50/60Hz) rated current	AC115V 10A		AC220V 5A		AC115V 14.5A		AC220V 7A		AC115V 19A		AC220V 9.5A		AC220V 10.5A		AC220V 12A		AC220V 14A		AC220V 16.5A		AC220V 18.5A
Weight	Approx. 24kg			Approx. 30kg			Approx. 37kg		Approx. 38kg		Approx. 44kg		Approx. 52kg		Approx. 58kg		Approx. 62kg					
Accessories											Insulating cover 1 pcs											
Options	Stand	ON30C						ON61C														
	Others	Setter plate, exhaust unit (AC220V), sample box, N ₂ introduction device (with flow meter), mini printer, data logger, combination warning light (standby/operation/failure), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, central monitoring software																				

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3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

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8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Automatic Overheating Preventer

Overheat Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

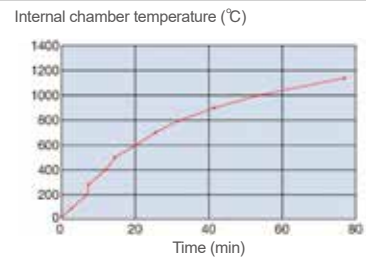
Overcurrent Leakage Circuit Breaker



Control panel



Temperature rise characteristic curve (FO301C/FO311C)



Exhaust device unit (optional)



Able to quickly exhaust gases generated by rising temperature inside the chamber.
 Piping: flexible pipe, aluminum
 Length 1.5m
 Diameter 50mm
 Exhaust unit power:
 Single phase AC220V 0.15A

Internal chamber



Improved thermal insulation features and temperature distribution accuracy by adopting a reasonable thermal insulation structure.

External temp. output terminal (optional)

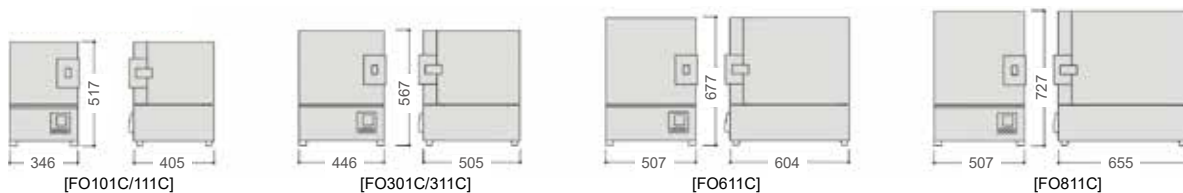


- Time-up output
Output at auto stop and program end
- Measured temperature transmission output
For recording and monitoring internal chamber temperature.
Temperature output: 4~20mA

Sample tray (optional)



Dimension diagram (mm)



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Muffle Furnaces | Built-in Heating Wires

FP111C/311C/511C

Operating temp. range 100~1150°C

Temp. adjusting accuracy ±1.5°C

Internal capacity 1.5L 7.5L 11.3L

High-function muffle furnace with built-in heater.

Features

- High-quality ceramic furnace body, built-in heater, not contaminated by samples. Program operation is available.
- Simple operation with up/down key settings, equipped with a high-operability controller for precise temperature control.
- Temperature, time and indicated values can be digitally displayed.
- Use a controller with integrated digital settings and overheat protection. Support self-diagnosis functions, overcurrent leakage protection switch, and other safety controls in case of anomalies.
- Use R-type thermocouple for long life.
- Equipped with exhaust vent.
- Optional features available, such as exhaust unit, sample trays, nitrogen gas introduction device (with flow meter), temperature output terminal and so on.



Specifications

Model		FP111C	FP311C	FP511C
Performance	Operating temp. range	100~1150°C		
	Temp. adjusting accuracy	±1.5°C (at 1150°C)		
	Time to reach maximum temp. at room temp.	Approx. 80 min	Approx. 100 min	Approx. 120 min
Composition	Exterior material	Cold rolled steel plate with chemical proofing coating		
	Furnace body	Ceramic fiber		
	Sensors	Dual R-type thermocouple		
	Heater	FeCrAl alloy heating wire		
		1.1kW	2.4kW	3.5kW
	Exhaust vent	Inner diameter 20mm, upper part		
	Cooling fan blade	Axial flow fan		
Controllers	Temp. control method	The heater output is controlled by a microcomputer PID controller		
	Temp. setting/display	Digital setting via function menu key and ▲▼ keys		
	Overheating protection	Integrated controller		
	Overheat protection setting method	Digital setting		
	Operation functions	Fixed temp. operation, program operation, auto start, quick auto stop, auto stop, programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)		
	Additional functions	Deviation correction function, power failure compensation function, key lock function		
Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer function)			
Safety device		Self-diagnostic: Temperature sensor malfunction, display malfunction, automatic overheat prevention malfunction, measured temperature malfunction, leakage protection switch, overheat prevention device (controller integrated electronic type)		
Specifications	Internal dimensions (W×D×H mm)	100×150×100	200×250×150	300×250×150
	External dimensions (W×D×H mm)	376×405×516	446×505×566	507×505×626
	Internal capacity	1.5L	7.5L	11.3L
	Power supply (50/60Hz) rated current	AC220V 5.5A	AC220V 11A	AC220V 16A
	Weight	Approx. 24kg	Approx. 42kg	Approx. 48kg
Accessories		Insulating cover 1 pcs, firing plate 1 pcs		
Options	Stand	ON30C		ON61C
	Others	Setter plate, exhaust unit (AC220V), sample box, N ₂ introduction device (with flow meter), mini printer, data logger, combination warning light (standby/operation/failure), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, central monitoring software		

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Overheat Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

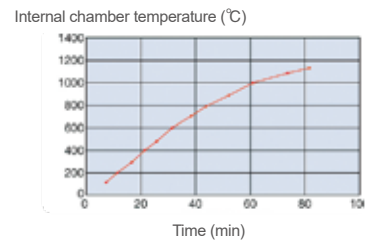
Overcurrent Leakage Circuit Breaker



Control panel



Temperature rise curve (FP311C)



Exhaust unit (optional)



Able to quickly exhaust gases generated by rising temperature inside the chamber.

Piping: flexible pipe, aluminum

Length 1.5m

Diameter 50mm

Exhaust unit power:

Single phase AC220V 0.15A

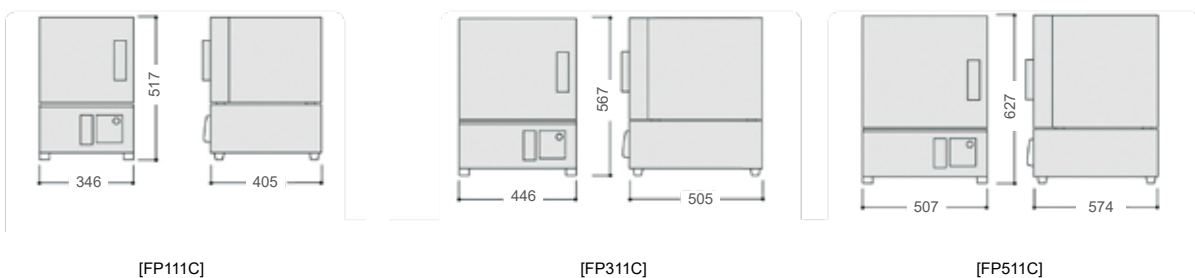
Internal chamber



Heater not exposed, improved thermal insulation features and temperature distribution accuracy by adopting a reasonable thermal insulation structure.

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Dimension diagram (mm)



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Provide safe, environment friendly and energy-saving products.

Multiple choices are available due to various models with different purposes. Meet the demands of temperature range, temperature distribution accuracy, size, price, program operation, special use type and so on.

Function · Safety Device

Forced convection circulation
By means of forced circulation of high-performance centrifugal fan blades, stir the chamber inside to obtain uniform temperature distribution accuracy.

Natural convection
By means of heater or air jacket natural convection in chamber.

Auto overheat prevention function
Built-in overheat prevention function of controller, usually when constant temp. oven or drying oven chamber temp. reaches set temp. + 12°C, and constant temp. bath temp. reaches set temp. + 6°C, the heater cuts off (auto recovery).

Overheat protector
Controller and overheat protector are all-in-one. They share the same power source, but other circuits are standalone. If overheat abnormally, cut off (manual recovery) heater circuit.

Standalone overheat protector
Different circuit from controller, if overheat abnormally, cut off (manual recovery) heater circuit. According to different models, respectively carry digital, liquid-expansion, bimetallic type, etc.

Self-diagnosis function
By means of the microcomputer carried in controller, detect the abnormality of circuit, if abnormal occurs, control the device within safety range and the alarm sounds.

Key lock function
Prevent the misoperation during operation.

Backup function
Even in power outage or cut off power source, the set value can be memorized.

Power outage compensation
When the power recovers, it's able to select to stop or continue operation.

Overcurrent breaker
When abnormal current passes, cut off the power to protect the unit.

Overcurrent electric leakage breaker
The breaker has both overcurrent cut-off function and electric leakage cut-off function.

Emergency stop button
To stop in an emergency, press the emergency stop button to cut off power.

Model selection list

Category	Max. temp.	Temp. fluctuation (°C)	Temp. deviation/gradient (°C) or temp. uniformity (%)	Series	Models	Features	Internal capacity (L)								Page No.
							0-20	20-50	50-100	100-150	150-200	200-400	400-600	600-1000	
General type	500°C	±1°C	±6°C	DH	DH450C/650C	Precision type, 500°C			91			216			71
		±0.2°C	±4°C	DH	DH411C/611C	Precision type, horizontal			91			216			66
	360°C	±1°C	±5°C	DHS	DHS710C/810C	Precision type, vertical						418	558		70
		±0.1°C	±1.5%	DN-H	DN410HC/610HC	High temperature type			95			223			68
	300°C	±0.3°C	±4°C	DH	DH811C/1011C	Precision type, horizontal, large capacity							512	1000	69
		±0.5°C	±1.5%	DKT	DKT410C/610C/810C	High-function type, touch screen			90		150	300			58
	270°C	±0.6°C	-	DKV	DKV400-Y/410-Y	High-function type, touch screen			90						65
		±0.5°C	-	DKV	DKV600-Y/610-Y	High-function type, touch screen					150				65
		±0.6°C	-	DKV	DKV810-Y	High-function type, touch screen						300			65
	260°C	±0.5°C	±2%	DKN	DKN303C/313C/403C/413C/603C/613C	Standard type, program operation		27	90		150				60
		±0.5°C	±2%	DKM	DKM301C/311C/401C/411C/601C/611C	Economical type, fixed temp. operation		27	90		150				62
		±0.5°C	±2%	DKL	DKL301C/311C/401C/411C/601C/611C	Basic function type		27	90		150				64
		±0.5°C	±1.5%	DNF	DNF401C/411C/601C/611C/811C/911C	Energy-saving type, variable wind speed			90		150	300	540		74
		-	-	DKG	DKG611/611V/811/811V	Labor-saving, rapid heating and cooling					150	300			76
		±0.5°C	±4°C	DFS	DFS710C/810C	Precision type, vertical						418	558		70
		±0.1°C	±3°C	DF	DF411C/611C	Precision type			91			216			66
		±0.5°C	-	DKV	DKV910-Y	High-function type, touch screen							545		65
	210°C	±0.5°C	±1.5%	DNE	DNE401C/411C/601C/611C/811C/911C	Energy-saving type			90		150	300	540		72
		±0.5°C	±2.5%	DKN	DKN813C/913C	Standard type, program operation						300	535		60
	200°C	±0.2°C	±2°C	DF	DF811C/1011C	Precision type, horizontal, large capacity							512	1000	69
Natural convection	300°C	±1°C	±3%	DX	DX302C/312C/402C/412C	Economical type, fixed temp. operation		28	74					82	
		±1°C	±3%	DVT	DVT410C/610C	Natural convection, high-function type, touch screen				117	188			77	
	280°C	±1°C	±3%	DX	DX602C/612C	Natural convection, economical type, fixed temp. operation				153				82	
		±1°C	±3%	DY	DY301C/311C/401C/411C	Basic function type		28	74					81	
	±1°C	±3%	DY	DY601C/611C	Basic function type				153					81	
	260°C	±1°C	±3%	DVS	DVS403C/413C/603C/613C	Natural convection, standard type			99		162			79	
Anaerobic	600°C	±0.5°C	±8°C	DNN	DNN460C/660C	N ₂ replacement, oxygen concentration 20ppm			91			261		85	
	360°C	±0.2°C	±1.5%	DN-I	DN410IC/610IC	N ₂ replacement, heating in an oxygen-free environment			95			223		83	
		±0.3°C	±5°C	DNN	DNN430C/630C	N ₂ replacement, oxygen concentration 20ppm			91			261		85	
		±0.2°C	±5°C	DH-I	DH611C	Anaerobic, oxygen concentration 5000ppm						216		84	
	260°C	±0.1°C	±4°C	DF-I	DF611C	Anaerobic, oxygen concentration 5000ppm						216		84	
	Explosion-proof	500°C	±1°C	±8°C	DH-S	DH450SC	Explosion-proof, 500°C			91					87
		360°C	±0.3°C	±5°C	DH-S	DH411SC/611SC	Explosion-proof, precision type			91			216		86
		300°C	±0.3°C	±5°C	DH-S	DH811SC/1011SC	Explosion-proof, precision type, large capacity						512	1000	87
		260°C	±0.2°C	±4°C	DF-S	DF411SC/611SC	Explosion-proof, precision type			91			216		86
		200°C	±0.5°C	±3°C	DF-S	DF811SC/1011SC	Explosion-proof, precision type, large capacity						512	1000	87
For labware	70°C	±0.5°C	±5°C	DG	DG410C/450C/810C/850C	Natural convection, forced exhaust			92			445		88	
Clean	500°C	±0.5°C	±8°C	DTN	DTN450C/650C	Cleanliness 100 class, oxygen concentration 20ppm			91			261		94	
		±0.3°C	±1.5%	DT	DT430C/430UC/630C/630UC	Heating in a dust-free environment			91			216		90	
	360°C	±0.5°C	±1.5%	DTS	DTS830C/830UC	Heating in a dust-free environment, large capacity						300		92	
		±0.3°C	±5°C	DTN	DTN430C/630C	Cleanliness 100 class, oxygen concentration 20ppm			91			261		94	
	260°C	±0.3°C	±1.5%	DE	DE430C/430UC/630C/630UC	Heating in a dust-free environment			91			216		90	
		±0.5°C	±1.5%	DES	DES830C/830UC	Heating in a dust-free environment, large capacity						300		92	
	150°C	±0.5°C	±3.0%	DEC	DEC812C/912C	Heating in a dust-free environment, economical type						236	535	89	
Far infra-red heating	360°C	±0.2°C	±5°C	DIR	DIR631C	Far infrared heating						216		95	
High temp.	700°C	±2°C	±5%	DR	DR210C	Temperature 700°C	13.8							96	
Vacuum	400°C	±0.5°C	±1.0°C	DPHH	DPHH43C/63C	Vertical, 400°C			91			216		101	
	300°C	±0.5°C	±1.0°C	DPH	DPH43C/63C	Vertical, 300°C			91			216		100	
	240°C	±0.5°C	±1.5°C	DP	DP23C/33C	Standard type	10	27						98	
		±0.5°C	±1.5°C	ADP	ADP200C/210C/300C/310C	Benchtop, economical type	10	27						99	
	200°C	±0.5°C	±2.5%	DPF	DPF43C/63C	Vertical, high precision			91			216		100	
		±1°C	±1.0°C	DPT	DPT40C/60C/80C/100C	High-function type, touch screen			91			216	512	1000	97
±0.5°C	±1.0°C	DP	DP43C/63C/83C/103C	Standard type			91			216	512	1000	98		

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Forced Convection Ovens | Programmable, Touch Panel

DKT410C/610C/810C

Operating temp. range RT+15~300°C

Temp. uniformity ±1.5% (at 300°C)

Internal capacity 90L 150L 300L

Pioneer in standard high-end constant temperature ovens with multiple functions, including program operation.

Features

- 7-inch touch screen for easy operation with three operation modes, including fixed temp. operation, program operation, timing operation. Standard 3-level authorization login.
- 100 programs, each program maximum 30 segments. Standard data storage function, data storage capacity approximately 10 years. Temperature rise curve tracking function, program operation mode, able to visually display set temperature and achieved temperature, providing reference for users to set reasonable temperature rise curve.
- Automatically stop heating and fan rotation upon opening the door, ensuring the safety of user samples.

Safety

- Self-diagnostic circuit (temperature sensor error detection, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), independent overheating prevention, overcurrent leakage protection and three-level authorization management system, heating and fan stops operating when door opens.



Specifications

Model	DKT410C	DKT610C	DKT810C	
System	Forced convection			
Performance	Operating temp. range	Room temp. +15~300°C		
	GB standard	Temp. fluctuation	±0.5°C (at 300°C)	
		Temp. uniformity	±1.5% (at 300°C)	
	Max. temp. reaching time	≤120min		
Composition	Interior material	Stainless steel plate		
	Exterior material	Cold rolled steel plate with chemical proofing coating		
	Insulating material	Rock wool+centrifugal glass wool		
	Heater	Stainless steel heating pipe		
		2kW	1.3kW×2	1.85kW×2
	Fan blade/motor	Centrifugal fan blade, 30W motor×1		
	Cable port	I.D. 33mm×1, located on the right		
	Exhaust vent	I.D. 33mm×2, located at the back		
Observation window	None			
Controllers	Temp. control method	3-stage PID		
	Temp. setting method	7-inch color touch screen		
	Temp. display method	7-inch color touch screen		
	Timer	1 min~99 h 59 min		
	Operation functions	Fixed temp. operation, program operation, timing operation		
	Program mode	100 programs, each program has a maximum of 30 segments		
	Additional functions	Temperature curve, temperature history curve, alarm records, alarm history records, operation log, data export function, language switching (Chinese, Japanese, English), calibration function, power failure compensation function, screen brightness adjustment, three-level authorization function		
Sensors	Temperature controller: K-type thermocouple, overheat protection: Liquid expansion temperature controller			
Safety device	Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, and heating and fan stops operating when door opens			
Specifications	Internal dimensions (W×D×H mm)	450×450×450	600×500×500	600×500×1000
	External dimensions (W×D×H mm)	610×690×960	760×740×1010	760×740×1780
	Internal capacity	90L	150L	300L
	Shelf load	30kg/layer		
	Shelf layers	11 layers	13 layers	29 layers
	Support spacing	30mm		
	Power supply (50Hz) rated current	AC220V, 9A	AC220V, 12A	AC220V, 17A
	Weight	Approx. 80kg	Approx. 100kg	Approx. 140kg
Accessories	Shelf	Stainless steel wire shelf		
	Supports	2 pcs		4 pcs
Options	Stand	ONK60C		
	Stacking fittings	ODK40C	-	-
	Others	Shelf (1 shelf with 2 supports) cable port (30/50mm), micro printer, data logger, combination warning light (standby/running/fault), remote monitoring (network port), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal		

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Forced Convection

Automatic Overheating Preventer

Independent Overheating Preventer

Self-diagnostic Function

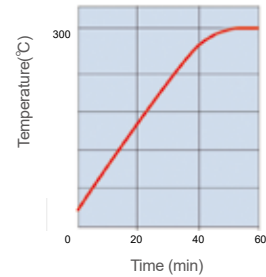
Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker



Temperature rise curve



Control panel



Internal chamber



Shelf (Support)



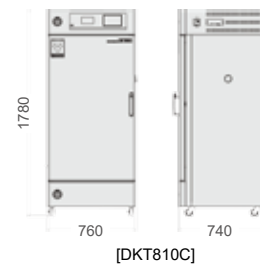
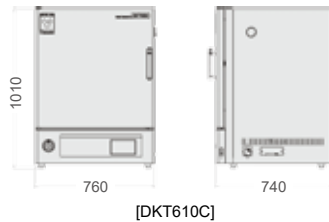
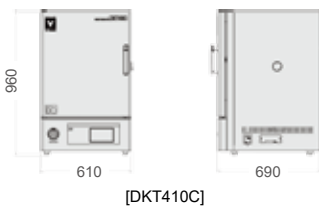
Cable port (standard configuration)



Exhaust vent (standard configuration)



Dimension diagram (mm)



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Forced Convection Ovens | Standard, Program Operation

DKN303C/313C/403C/413C/603C/613C/813C/913C

Operating temp. range RT+10~260°C

RT+10~210°C (DKN813C, 913C)

Temp. distribution accuracy ±2.5°C (at 210°C)

Internal capacity 27L 90L 150L 300L 535L

A proven line of standard forced-convection ovens with multiple operating modes, including programmable operation.

Features

- Easy operation with selectable modes: fixed temperature, programmable operation, quick auto-stop, auto-stop, and auto-start.
- Digital settings via dedicated function/menu keys and ▲/▼ keys. Supports 6 patterns with up to 90 segments per program.
- Temperature calibration offset and key-lock are available via sub-menu keys.

Safety

- Self-diagnostic functions (temperature sensor error detection, heater disconnection protection, and SSR short-circuit protection), independent overheat protection, an earth leakage circuit breaker (ELCB) with over-current protection, and a key-lock function.



Specifications

Model	DKN303C	DKN313C	DKN403C	DKN413C	DKN603C	DKN613C	DKN813C	DKN913C		
System	Forced convection									
Performance	Operating temp. range		Room temp. +10~260°C				Room temp. +10~210°C			
	GB standard	Temp. fluctuation	±0.5°C (at 260°C)				±0.5°C (at 210°C)			
		Temp. uniformity	±2% (at 260°C)				±2.5% (at 210°C)			
	JTM standard	Temp. adjusting accuracy	±1.0°C (at 210°C)							
		Temp. distribution accuracy	±2.5°C (at 210°C)							
Max. temp. reaching time		Approx. 90min				Approx. 60min				
Composition	Interior material		Stainless steel plate							
	Exterior material		Cold rolled steel plate with chemical proofing coating							
	Insulating material		Centrifugal glass wool+rock wool							
	Heater		Stainless steel heating pipe		0.8kW		1.2kW	1.5kW	1.5kW×2	1.8kW×2
	Fan blade/motor		Centrifugal fan blade, 10W motor×1				Motor: 30W×1		Motor: 10W×2	
	Cable port		Inner diameter: 33mm×1, located on the right							
	Exhaust vent		I.D. 33mm×2, located on the top				I.D. 33mm×2, located at the back			
Controllers	Observation windows (width×height in mm)		180×180		250×280		None			
	Temp. control method		3-stage PID							
	Temp. setting method		Digital setting through special function menu keys and ▲/▼ keys							
	Temp. display method		Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display							
	Timer		1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)							
	Operation functions		Fixed temperature operation, program operation, quick auto stop operation, auto stop operation, auto start operation, etc.							
	Additional functions		Deviation correction, key lock, power failure compensation							
	Temp. control sensor		K-type sensor							
	Overheat sensor		Liquid expansion type (independent circuit for safety)							
	Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, and key lock functions							
Specifications	Internal dimensions (W×D×H mm)		300×300×300		450×450×450		600×500×500		600×500×1000	1070×500×1000
	External dimensions (W×D×H mm)		410×451×677		560×601×827		710×651×877		710×651×1598	1180×651×1606
	Internal capacity		27L		90L		150L		300L	535L
	Shelf load		15kg/layer							
	Shelf layers		6 layers		11 layers		13 layers		29 layers	29 layers×2 columns
	Support spacing		30mm							
	Power supply (50/60Hz) rated current		AC115V 7.5A	AC220V 4A	AC115V 11A	AC220V 6A	AC115V 13.5A	AC220V 7.5A	AC220V 14A	AC220V 17A
Weight		Approx. 35kg		Approx. 60kg		Approx. 75kg		Approx. 110kg	Approx. 190kg	
Accessories	Shelf		Stainless punching mesh plate 2 pieces, 1 of which is fixed to the chamber; do not disassemble						4 pcs	8 pcs
	Supports		2 pcs						6 pcs	12 pcs
Options	Stand		ON30C		ON61C					
	Stacking fittings		-		OD40C		OD60C			
	Others		Shelf (1 shelf with 2 supports), cable port (30/50mm), micro printer, data logger combination, warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software							

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Forced Convection

Automatic Overheating Preventer

Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker



Control panel



Internal chamber



DKN603C/613C

DKN913C

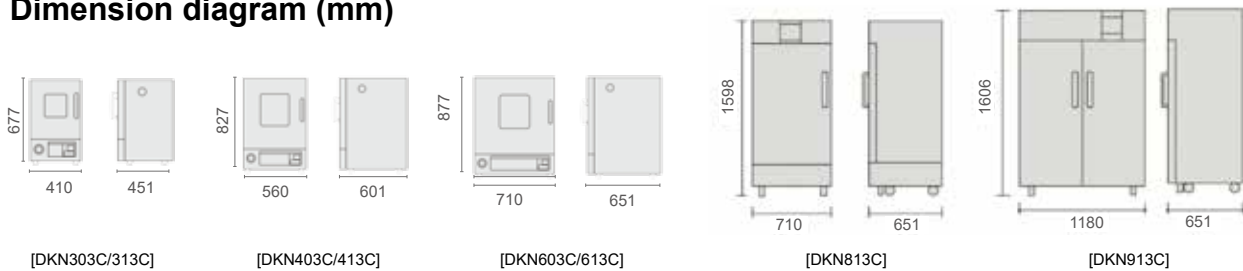
Cable port (standard configuration)



Exhaust vent (standard configuration)



Dimension diagram (mm)



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Forced Convection Ovens | Economical, Fixed Temp. Operation

DKM301C/311C/401C/411C/601C/611C

Operating temp. range RT+10~260°C

Temp. distribution accuracy ±2.5°C (at 210°C)

Internal capacity 27L 90L 150L

Economical model for fixed temperature operation, a simple-to-operate forced convection constant temperature oven.

Features

Operability & functions

- Easy to operate, fixed temperature operation, quick auto stop operation, auto stop operation, and auto start operation.
- Digital setting through special operation function menu keys and ▲/▼ keys. Able to set overheating protection, deviation correction, and key lock.

Safety

- Equipped with self-diagnostic circuits (temperature sensor anomaly), power failure compensation function, deviation correction function, leakage protection against overcurrent, independent overheating preventer and other safety features.



Specifications

Model	DKM301C	DKM311C	DKM401C	DKM411C	DKM601C	DKM611C
System	Forced convection					
Performance	Operating temp. range Room temp. +10~260°C					
GB standard	Temp. fluctuation		±0.5°C (at 260°C)			
	Temp. uniformity		±2% (at 260°C)			
JTM standard	Temp. adjusting accuracy		±1.0°C (at 210°C)			
	Temp. distribution accuracy		±2.5°C (at 210°C)			
Max. temp. reaching time		Approx. 60 min (room temp 10~210°C), approximately 90 min (room temp 10~260°C)				
Composition	Interior material Stainless steel plate					
	Exterior material Cold rolled steel plate with chemical proofing coating					
	Insulating material Rock wool+centrifugal glass wool					
	Heater Stainless steel heating pipe					
	0.8kW		1.2kW		1.5kW	
	Fan blade/motor Centrifugal fan blade, 10W motor×1					
Cable port Inner diameter: 30mm×1, located on the right						
Exhaust vent I.D. 33mm×2, located on the top						
Controllers	Temp. control method PID control					
	Temp. setting method Digital setting through function menu key and ▲/▼ keys					
	Temp. display method Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display					
	Timer 1 min.~99 h 59 min. and 100~999 h 50 min (including timer waiting function)					
	Operation functions Fixed temp. operation, auto start, auto stop, quick auto stop					
	Additional functions Deviation correction, key lock, power failure compensation					
Sensors Temperature controller: K-type thermocouple, overheating protection: Liquid expansion temperature controller						
Safety device Self-diagnostic function (temperature sensor abnormality, SSR short circuit, automatic overheating preventer), key lock, independent overheating preventer, earth leakage circuit breaker with overcurrent protection						
Specifications	Internal dimensions (W×D×H mm)		300×300×300		450×450×450 600×500×500	
	External dimensions (W×D×H mm)		410×451×677		560×601×827 710×651×877	
	Internal capacity		27L		90L 150L	
	Shelf load 15kg/layer					
	Shelf layers		6 layers		11 layers 13 layers	
	Support spacing 30mm					
	Power supply (50/60Hz) rated current		AC115V, 7.5A AC220V, 4A		AC115V, 11A AC220V, 6A AC115V, 13A AC220V, 7.5A	
Weight		Approx. 35kg		Approx. 50kg Approx. 65kg		
Accessories	Shelf Stainless punching mesh plate 2 pieces, 1 of which is fixed to the chamber; do not disassemble					
	Supports 2 pcs					
Options	Stand		ON30C		ON61C	
	Stacking fittings		-		OD40C OD60C	
	Others Shelf (1 shelf plate with 2 shelf supports), cable port (30/50mm)					

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Forced Convection

Automatic Overheating Preventer

Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker



Control panel



Cable port (standard configuration)



Exhaust vent (standard configuration)

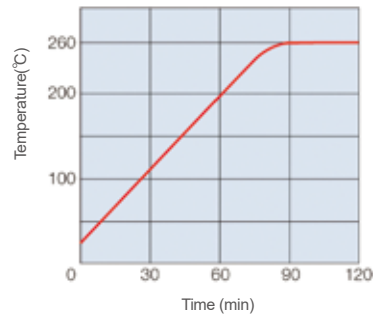


Internal chamber



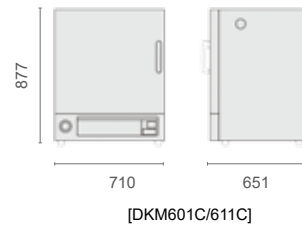
DKM601C/611C

Temperature rise curve



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Dimension diagram (mm)



Forced Convection Ovens | Basic Function, Economical

DKL301C/311C/401C/411C/601C/611C

Forced
ConvectionAutomatic
Overheating
PreventerIndependent
Overheating
PreventerSelf-diagnostic
FunctionOvercurrent
Leakage Circuit
Breaker

Operating temp. range RT+10~260°C

Temp. distribution accuracy ±2.5°C (at 260°C)

Internal capacity 27L 90L 150L

Ensuring the basic functions of fixed temperature operation models.



Various functional settings allow for simpler operations in forced convection constant temperature ovens with fixed operation.

Features

- Easy to operate, fixed temp. operation, auto stop operation, quick auto stop operation, and auto start operation.

Safety

- Equipped with self-diagnostic circuits (temperature sensor anomaly, temperature overheating prevention), earth leakage circuit breaker with overcurrent protection, and independent overheating preventer and other safety functions.

Specifications

Model		DKL301C	DKL311C	DKL401C	DKL411C	DKL601C	DKL611C	
System		Forced convection						
Performance	Operating temp. range	Room temp. +10~260°C						
	GB standard	Temp. fluctuation	±0.5°C (at 260°C)					
		Temp. uniformity	±2% (at 260°C)					
	JTM standard	Temp. adjusting accuracy	±1.0°C (at 260°C)					
		Temp. distribution accuracy	±2.5°C (at 260°C)					
Max. temp. reaching time		Approx. 90 min (room temp + 10~260°C)						
Composition	Interior material	Stainless steel plate						
	Exterior material	Cold rolled steel plate with chemical proofing coating						
	Insulating material	Centrifugal glass wool						
	Heater	Stainless steel heating pipe		0.8kW		1.2kW		1.5kW
		Fan blade/motor						
	Centrifugal fan blade, 10W motor×1							
	Cable port							
Inner diameter: 30mm×1, located on the right								
Exhaust vent								
I.D. 33mm×2, located on the top								
Controllers	Temp. control method							
	PID control							
	Temp. setting method							
	Digital setting through function menu key and ▲/▼ keys							
	Temp. display method							
	Measured temperature display: red 4-digit led, digital display							
	Set temperature display: green 4-digit led, digital display							
Timer								
1 min to 99 h~50 min								
Operation functions								
Fixed temperature operation, auto stop operation, quick auto stop operation, auto start operation								
Additional functions								
Deviation correction function								
Sensors								
Temperature controller: K-type thermocouple Overheating Protection: Liquid expansion temperature controller								
Safety device								
Self-diagnostic function (temperature sensor abnormal, temperature overheat prevention), independent overheating prevention, leakage protection circuit breaker for overcurrent								
Specifications	Internal dimensions (W×D×H mm)		300×300×300		450×450×450		600×500×500	
	External dimensions (W×D×H mm)		410×451×677		560×600×827		721×651×877	
	Internal capacity		27L		90L		150L	
	Shelf load		15kg/layer					
	Shelf layers		6 layers		11 layers		13 layers	
	Support spacing		35mm					
	Power supply (50/60Hz) rated current		AC115V, 7.5A	AC220V, 4A	AC115V, 11A	AC220V, 6A	AC115V, 13.5A	AC220V, 7.5A
	Weight		Approx. 35kg		Approx. 50kg		Approx. 65kg	
Accessories	Shelf		Stainless punching mesh plate					
			2 pcs					
Supports		4 pcs						
Options	Stand		ON30C		ON61C			
	Stacking fittings		-		OD40C		OD60C	
	Others		Shelf (1 shelf plate with 2 shelf supports), cable port (30/50mm)					

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Forced Convection Ovens | 3.5-inch Touch Panel

DKV400-Y/410-Y/600-Y/610-Y/810-Y/910-Y

Made in Japan

Operating temp. range	RT+10~270°C	RT+10~220°C (DKV910-Y)	Internal capacity	90L	150L	300L	545L
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The first convection oven equipped with a color LCD controller.

Features

- Easy-to-use, highly visible color LCD controller-VSD-1 (3.5-inch), fixed temperature operation.
- Quick auto-stop operation/auto-stop operation/auto-start operation/programmed auto-start operation (time setting) .
- Programmed operation (time setting)
- Door hinges are equipped with a click function that allows the door to hold the angle at two positions of 30° and 120° (The maximum opening range is 180°). Samples can be safely loaded and unloaded without fear of burns.
- Specially designed door handle for ovens. Unlocking and opening the door can be easily performed with one hand. The pushbutton is large and easy to press. These highly reliable handles have been used for many years in manufacturing environments where doors are opened and closed frequently.



Specifications

Model	DKV400-Y	DKV410-Y	DKV600-Y	DKV610-Y	DKV810-Y	DKV910-Y			
Circulation method	Forced air circulation								
Ambient operating temp. range	5~35°C								
Setting temp. range	0~270°C					0~220°C			
Performance ^{*1}	Operating temp. range ^{*2}	Room temp. +10~270°C				Room temp. +10~220°C			
	Temperature fluctuation ^{*2}	±0.6°C (at 270°C)		±0.5°C (at 270°C)		±0.6°C (at 270°C)			
	Temperature gradient ^{*2}	9°C (at 270°C)		11°C (at 270°C)		11°C (at 220°C)			
	Temperature rise speed ^{*2}	4.4°C/min		2.8°C/min		3.4°C/min			
	Max. temp. reaching time ^{*3}	Approx. 55 min		Approx. 85 min		Approx. 75 min			
Configuration	Exterior	Chrome-free electrogalvanized steel plate with baked-on coating							
	Interior	Stainless steel plate							
	SUS pipe heater	1.5kW		1.5kW		2.5kW			
	Cable hole	I.D. 33mm (1 pc., right side)							
	Exhaust port	I.D. 33 mm (2 pcs., on top)				I.D. 33 mm (2 pcs., on rear)			
Safety functions ^{*3}	Self-diagnostic function (automatic overheating prevention, temperature sensor error, SSR short, heater disconnection, fan error, clock element error, main relay abnormality, memory abnormality, internal communication abnormality) /independent overheating protector / Door switch (door alarm) / Overcurrent leakage breaker / safety bracket for fall prevention (model 810-Y/910-Y)								
Controller	Model	Type VSD-1							
	Temp. control method	PID control by microcomputer							
	Temp. display method	3.5-inch color LCD							
	Timer/Clock timer	1 minute to 99 hours and 59 minutes / Date: hour: minute (up to 31 days later)							
	Operation function	<ul style="list-style-type: none"> ●Fixed temperature operation ●Quick auto-stop operation / auto-stop operation / auto-start operation / programmed operation (time setting) ●Programmed operation (time setting) 							
	Additional functions	Calibration offset function / power failure return mode selection function / timer wait function / security management function / temperature upper and lower limit alarm function / fan OFF delay function / power failure alarm / external communication terminal (RS-485) / temperature output terminal (4-20mA) / time-up output terminal / error output terminal / recorder terminal / program preview function / operation trend function							
Sensors	Temperature controller / independent overheating protection: K thermocouple								
Standard	Internal dimensions ^{*5}	W450×D450×H450mm		W600×D500×H500mm		W600×D500×H1000mm			
	External dimensions ^{*5}	W580×D635×H830mm		W730×D685×H880mm		W730×D685×H1610mm			
	Internal capacity	90L		150L		300L			
	Number of shelves/pitch	11 steps / 30mm		13 steps / 30mm		29 steps / 30mm			
	Shelf load capacity	15kg / pc							
	Load capacity total in chamber	30kg				60kg		120kg	
	Power supply (50/60Hz) ^{*7}	AC115V Single-phase	AC220V Single-phase	AC115V Single-phase	AC220V Single-phase	AC220V Single-phase			
Rated current (breaker capacity)	13.5A (15A)	7.5A (10A)	13.5A (15A)	7.5A (10A)	12A (15A)		14.5A (16A)		
Weight	Approx. 65kg		Approx. 75kg		Approx. 120kg		Approx. 195kg		
Accessories	Shelf plate/shelf bracket	1 pc. / 2 pcs.				3 pcs. / 6 pcs.		6 pcs. /12 pcs.	
	Others	Instruction manual (1 set: 5 sections), safety bracket for fall prevention (DKV810-Y / 910-Y only)							

*1 Performance is measured at 100V or 200V AC, 50Hz or 60Hz frequency, room temperature 23°C±5°C, humidity 65%RH±20%, and no load. Note that if the power supply voltage is below 100V or 200V or the outside temperature is low, the maximum temperature in the temperature control range may not be reached or the temperature rise time may be extended. *2 Test method is in accordance with JIS C 60068-3-5:2020. *3 Reference data *4 Safety function may malfunction if used beyond the operating voltage range (±10% of rating). Pay attention to the power supply voltage when using this product. *5 Protrusions are not included. *6 Specifications are subject to change without notice for product improvement. *7 Voltage modifications other than the listed specifications are also available. Please contact us for details.

- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
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- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
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- Stirrers & Shakers 11
- Options 12

Forced Convection Ovens | Precision, Horizontal

DF411C/611C, DH411C/611C

Operating temp. range	DF: RT+10~260°C	DH: RT+10~360°C	Temp. deviation	DF: ±3°C (at 260°C)	DH: ±4°C (at 360°C)	Internal capacity	91L	216L
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High-precision constant temperature ovens for thermal processing.



■ Features

- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. Programmable controller with 3 modes.
- Overheating protection, deviation correction and key locking through submenu keys.
- Quick exhaust and cooling through exhaust dampers.

■ Safety

- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.

■ Specifications

Model		DF411C	DF611C	DH411C	DH611C	
System		Forced convection and ventilation				
Performance	Operating temp. range	Room temp. +10~260°C		Room temp. +10~360°C		
	GB standard	Temp. fluctuation	±0.1°C (at 260°C)		±0.2°C (at 360°C)	
		Temp. deviation	±1.5°C (at 100°C), ±2°C (at 200°C), ±3°C (at 260°C)		±1.5°C (at 100°C), ±2°C (at 200°C), ±3°C (at 300°C), ±4°C (at 360°C)	
	JTM standard	Temp. adjusting accuracy	±0.1°C (at 260°C)		±0.2°C (at 360°C)	
		Temp. distribution accuracy	±1.5°C (at 260°C)		±2.5°C (at 360°C)	
Max. temp. reaching time	Approx. 60 min (to 260°C)		Approx. 80 min (to 360°C)			
Composition	Interior material	Stainless steel plate				
	Exterior material	Cold rolled steel plate with chemical proofing coating				
	Insulating material	Rock wool + centrifugal glass wool				
	Heater	2.1kW	3.0kW	2.7kW	3.75kW	
	Fan blade/motor	Axial fan blades, motor 20W×1				
	Cable port	I.D. 30 mm, located on the back				
	Other additional mechanisms	Exhaust dampers (manual)				
Controllers	Temp. control method	3-stage PID				
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys				
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display				
		Setting temp. display: Red 4-digit LED digital display				
	Timer	1 min.~99 h 59 min. and 100~999 h 50 min (including timer waiting function)				
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation				
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)				
	Additional functions	Deviation correction, key lock, power failure compensation				
Heater circuit control	SSR drive					
Sensors	K thermocouple (Temp. controller and overheating protector)					
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions				
Specifications	Internal dimensions (W×D×H mm)	450×450×450	600×600×600	450×450×450	600×600×600	
	External dimensions (W×D×H mm)	1050×620×840	1200×770×990	1050×620×840	1200×770×990	
	Internal capacity	91L	216L	91L	216L	
	Shelf load	30kg/layer				
	Shelf layers/shelf support spacing	9 layers/45mm	9 layers/60mm	9 layers/45mm	9 layers/60mm	
	Power supply (50/60Hz) rated current	AC220V 10A	AC220V 14A	AC220V 12.5A	AC220V 17.5A	
	Weight	Approx. 112kg	Approx. 156kg	Approx. 112kg	Approx. 156kg	
Accessories	Shelf	Stainless steel wire mesh plate				
	Supports	2 pcs	3 pcs	2 pcs	3 pcs	
Options	Stand	OP42/45C	OP62/65C	OP42/45C	OP62/65C	
	Others	Shelf (1 shelf with 2 supports), cable port (30/50mm), micro printer, data logger, combination warning light (standby/running/fault), automatic door, viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software, touch screen controller				

1 Sterilizers

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8 Baths

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11 Stirrers & Shakers

12 Options

Forced Convection

Automatic Overheating Preventer

Overheating Preventer

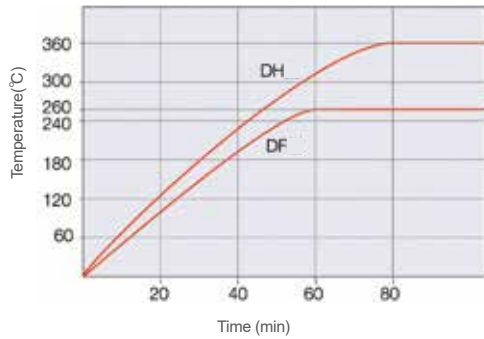
Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker

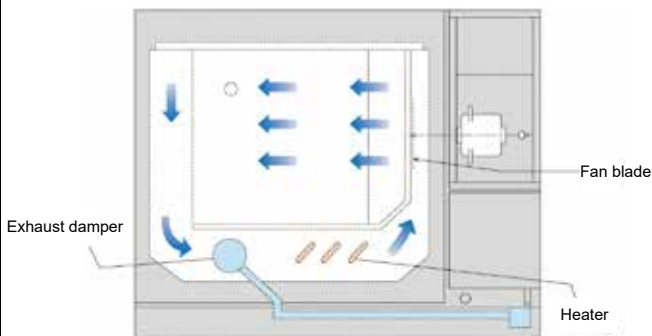
Temperature rise curve



Control panel



Structural diagram



Internal chamber

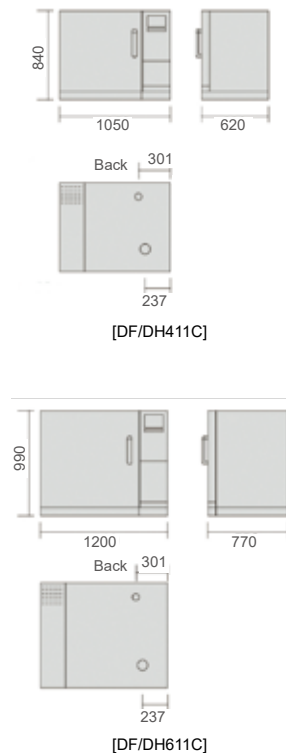


Options



- ① Exhaust pipe
- ② Data logger
- ③ Observation window

Dimension diagram (mm)



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Forced Convection Ovens | High Temp.

DN410HC/610HC

Forced
ConvectionAutomatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
FunctionOvercurrent
Leakage Circuit
Breaker

Operating temp. range RT+10~360°C

Temp. distribution accuracy $\pm 3.0^\circ\text{C}$ (at 360°C)

Internal capacity 95L 223L

Reliable constant temperature oven that supports high-temperature thermal tests.

Features

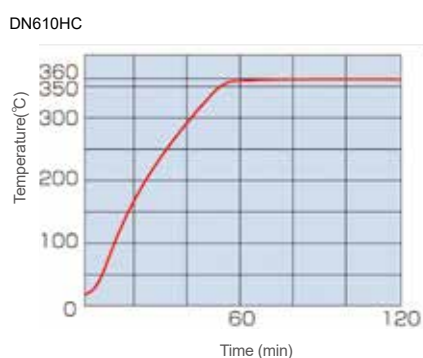
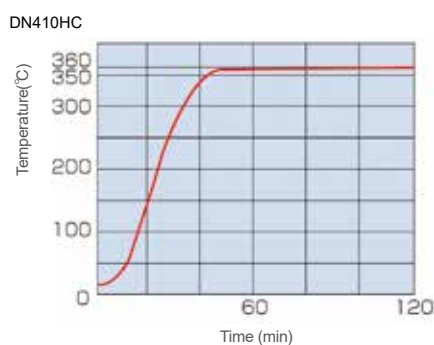
- Support performing high-temperature resistance tests and thermal processing at 360°C.
- Wide operating temperature range, high accuracy in temperature control.
- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and $\blacktriangle/\blacktriangledown$ keys. Programmable controller with 3 modes.

Safety

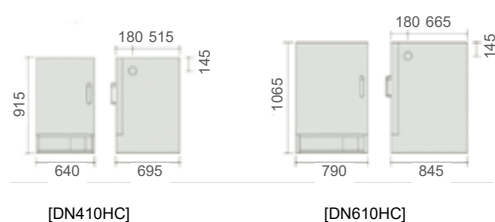
- Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.



Temperature rise curve



Dimension diagram (mm)



Specifications

Model		DN410HC	DN610HC
System		Forced convection	
Performance	Operating temp. range	Room temp. +10~360°C	
	GB standard	Temp. fluctuation	$\pm 0.1^\circ\text{C}$ (at 360°C)
		Temp. uniformity	$\pm 1.5\%$ (at 360°C)
	JTM standard	Temp. adjusting accuracy	$\pm 0.2^\circ\text{C}$ (at 360°C)
Temp. distribution accuracy		$\pm 3.0^\circ\text{C}$ (at 360°C)	
Max. temp. reaching time		Approx. 60 min	
Composition	Interior material	Stainless steel plate	
	Exterior material	Cold rolled steel plate with chemical proofing coating	
	Insulating material	Glass wool, rock wool	
	Heater	Stainless steel heating tube, 3.0kW	Stainless steel heating tube, 4.0kW
	Fan blade/motor	Centrifugal fan blades, high-temperature self-cooling motor 30W	
Cable port		Inner diameter: 30mm \times 1, located on the right	
Exhaust vent		I.D. 30 mm \times 2, located at the back	
Controllers	Temp. control method	3-stage PID	
	Temp. setting method	Digital setting through special function menu keys and $\blacktriangle/\blacktriangledown$ keys	
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display	
	Timer	1 min.~99 h 59 min. and 100~999 h 50 min (including timer waiting function)	
	Operation functions	Fixed temp. operation, auto start, auto stop, program operation	
	Program mode	Programmable controller with 3 modes (30 segments \times 1, 15 segments \times 2, 10 segments \times 3)	
	Additional functions	Deviation correction, key lock, power failure compensation	
Sensors		K thermocouple (Temp. controller and overheating protector)	
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions	
Specifications	Internal dimensions (W \times D \times H mm)	470 \times 450 \times 450	620 \times 600 \times 600
	External dimensions (W \times D \times H mm)	640 \times 695 \times 915	790 \times 846 \times 1065
	Internal capacity	95L	223L
	Shelf load	30kg/layer	
	Shelf layers/shelf support spacing	12 layers/30mm	17 layers/30mm
	Power supply (50/60Hz) rated current	AC220V 14A	AC220V 18.5A
Weight	Approx. 80kg	Approx. 120kg	
Accessories	Shelf	Stainless steel wire mesh plate 2 pcs	
	Supports	4 pcs	
	Stand	OH41C	OH61C
Options	Shelf (1 shelf includes 2 supports), cable port (30/50mm), micro printer, data logger, combination warning light (standby/running/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software		

1 Sterilizers

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3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

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10 Rotary Evaporators

11 Stirrers & Shakers

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Forced Convection Ovens | Large Capacity, Precision, Horizontal

DF811C/1011C, DH811C/1011C

Forced Convection

Automatic Overheating Preventer

Independent Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker

Operating temp. range DF: RT+10~200°C DH: RT+10~300°C

Temp. deviation DF: ±2°C (at 200°C) DH: ±4°C (at 300°C)

Internal capacity 512L 1000L

Large capacity high-precision constant temperature ovens for thermal processing.



Features

- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. Programmable controller with 3 modes.
- Overheating protection, deviation correction and key locking through submenu keys.
- Quick exhaust and cooling through exhaust dampers.

Safety

- With self-diagnostic circuits (temperature sensor anomaly, heater disconnection, automatic overheating prevention, SSR short circuit), overheating preventer, leakage protection switch for overcurrent prevention, key lock, and other safety features.

Specifications

Model		DF811C	DF1011C	DH811C	DH1011C	
System		Forced convection and ventilation				
Performance	Operating temp. range	Room temp. +10~200°C		Room temp. +10~300°C		
	GB standard	Temp. fluctuation	±0.2°C (at 200°C)		±0.3°C (at 300°C)	
		Temp. deviation	±1.5°C (at 100°C), ±2°C (at 200°C)		±1.5°C (at 100°C), ±2°C (at 200°C), ±4°C (at 300°C)	
	JTM standard	Temp. adjusting accuracy	±0.2°C (at 200°C)		±0.3°C (at 300°C)	
		Temp. distribution accuracy	±3.0°C (at 200°C)		±5.0°C (at 300°C)	
Max. temp. reaching time		Approx. 60 min (to 200°C)		Approx. 80 min (to 300°C)		
Composition	Interior material	Stainless steel plate				
	Exterior material	Cold rolled steel plate with chemical proofing coating				
	Insulating material	Aluminosilicate cotton				
	Heater	Stainless steel heating tubes with fins				
		4.5kW	6.0kW	6.9kW	9.0kW	
	Fan blade/motor	Axial fan blades, motor 20W×1	Axial fan blades, motor 20W×2	Axial fan blades, motor 20W×1	Axial fan blades, motor 20W×2	
Cable port		I.D. 30 mm, located on the back				
Other additional mechanisms		Exhaust dampers (manual)				
Controllers	Temp. control method	3-stage PID				
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys				
	Temp. display method	Achieved Temp. display: Green 4-digit LED digital display				
		Setting temp. display: Red 4-digit LED digital display				
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)				
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation				
	Program mode	Programmable controller with 3 modes (30 segments ×1, 15 segments ×2, 10 segments ×3)				
	Additional functions	Deviation correction, key lock, power failure compensation				
Heater circuit control	SSR drive					
Sensors	K thermocouple (Temp. controller and overheating protector)					
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions				
Specifications	Internal dimensions (W×D×H mm)	800×800×800	1000×1000×1000	800×800×800	1000×1000×1000	
	External dimensions (W×D×H mm)	1500×1015×1340	1700×1215×1540	1500×1015×1340	1700×1215×1540	
	Internal capacity	512L	1000L	512L	1000L	
	Shelf load	30kg/layer				
	Shelf layers/shelf support spacing	15 layers/50mm	19 layers/50mm	15 layers/50mm	19 layers/50mm	
	Power supply (50/60Hz) rated current	3 phase AC380V 7.5A	3 phase AC380V 10A	3 phase AC380V 11A	3 phase AC380V 14.5A	
	Weight	Approx. 350kg	Approx. 450kg	Approx. 350kg	Approx. 450kg	
Accessories	Shelf	Stainless punching mesh plate				
	Supports	3 pcs				
Options		Shelf (1 shelf with 2 supports), cable port (30/50mm), micro printer, data logger, combination warning light (standby/running/fault), automatic vent, viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software, touch screen controller				

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Forced Convection Ovens | Precision, Vertical

DFS710C/810C, DHS710C/810C

Forced Convection

Automatic Overheating Preventer

Independent Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker

Operating temp. range DFS: RT+10~260°C DHS: RT+10~360°C

Temp. deviation DFS: ±4°C(at 260°C) DHS: ±5°C(at 360°C)

Internal capacity 418L 558L

A precision large-capacity constant temperature oven suitable for various temperature characteristic experiments.

Features

Space-saving and large capacity design allows for high-precision temperature control and adaptation to a wide range of temperature variations, applicable for various thermal processing and temperature experiments.

- The space-saving design with the control panel positioned at the top effectively uses the space in experimental rooms and production lines.
- The control panel's key input is dialog-based, making it simple for anyone to complete the settings. The internal temperature during operation can be visually displayed through LED.
- Equipped with various operational functions, primarily program operation. Current functions can be enhanced through options.
- Despite being a large capacity machine, it also features high-performance temperature regulation accuracy. Additionally, control accuracy and drying characteristics are not affected even during venting operation.



Specifications

Model	DFS710C	DFS810C	DHS710C	DHS810C	
System	Forced convection and ventilation				
Performance	Operating temp. range	Room temp. +10~260°C		Room temp. +10~360°C	
	GB standard	Temp. fluctuation	±0.5°C (at 260°C)		±1.0°C (at 360°C)
		Temp. deviation	±4°C (at 260°C)		±5°C (at 360°C)
	JTM standard	Temp. adjusting accuracy	±0.2°C (at 260°C)		±0.3°C (at 360°C)
		Temp. distribution accuracy	±2.0°C (at 260°C)		±3.0°C (at 360°C)
Max. temp. reaching time	Approx. 50min		Approx. 60 min		
Composition	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Insulating material	Aluminosilicate cotton			
	Heater	Stainless steel heating tubes with fins			
		4.5 kW	5.4 kW	6 kW	
	Fan blade/motor	Centrifugal fan blades (with temperature insulation coating)/motor rated at 120W			
Cable port	Inner diameter: 30mm, located on the right				
Controllers	Temp. control method	PID control			
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys			
	Temp. display method	Achieved temperature display: Green 4-digit LED, digital display Setting temperature display: Red 4-digit LED, digital display			
	Timer	1 min~99 h 59 min and 100~999 h			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation			
	Program mode	Program operation: Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)			
Specifications	Additional functions	Deviation correction function, key locking function, power outage compensation function			
	Sensors	K thermocouple (Temp. controller and overheating protector)			
	Safety device	Self-diagnostic circuits (temperature sensor anomaly, heater disconnection, automatic overheating prevention, SSR short circuit), independent overheating prevention device, leakage protection, door switch, control cabinet switch			
Specifications	Internal dimensions (W×D×H mm)	620×750×900	620×750×1200	620×750×900	620×750×1200
	External dimensions (W×D×H mm)	770×965×1622	770×965×1922	770×965×1622	770×965×1922
	Internal capacity	418L	558L	418L	558L
	Shelf load	30kg/layer			
	Shelf layers	27 layers	37 layers	27 layers	37 layers
	Shelf plate spacing	30mm			
	Power supply (50/60Hz) rated current	Single phase AC220V 21A		3-phase AC380V 10A	
Weight	Approx. 150kg	Approx. 170kg	Approx. 150kg	Approx. 170kg	
Accessories	Shelf plates (2 stainless steel wire mesh plates), shelf supports (4)				
Options	Shelf plates, viewing windows, micro printers, data loggers, N ₂ introduction devices, abnormal alarm indicator lights, emergency stop switch, power failure manual recovery selection, cable ports (50/100mm), exhaust vents (80mm), exhaust flanges, automatic dampers, temperature output terminals, external alarm output terminals, timer output terminals, central monitoring software, touch screen controller				

Internal chamber



Shelf



1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Forced Convection Ovens | Precision, 500°C

DH450C/650C

Operating temp. range RT+10~500°C

Temp. deviation ±6°C (at 500°C)

Internal capacity 91L 216L

Fine ovens with a maximum working temperature of 500°C.



Features

- Maximum operation temperature 500°C.
- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. Programmable controller with 3 modes.
- Overheating protection, deviation correction and key locking through submenu keys.
- Quick exhaust and cooling through exhaust dampers.

Safety

- Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), independent overheating preventer, overcurrent leakage protection, key lock and other safety functions.

Specifications

Model		DH450C	DH650C	
System		Forced convection and ventilation		
Performance	Operating temp. range	Room temp. +10~500°C		
	GB standard	Temp. fluctuation	±0.5°C (at 300°C), ±1.0°C (at 500°C)	
		Temp. deviation	±1.5°C (at 100°C), ±2°C (at 200°C), ±3°C (at 300°C), ±5°C (at 400°C), ±6°C (at 500°C)	
	JTM standard	Temp. adjusting accuracy	±0.2°C (at 300°C), ±0.5°C (at 500°C)	
		Temp. distribution accuracy	±3.0°C (at 300°C), ±5.0°C (at 500°C)	
Max. temp. reaching time		Approx. 60 min (to 500°C)		
Composition	Interior material	Stainless steel plate		
	Exterior material	Cold rolled steel plate with chemical proofing coating		
	Insulating material	Aluminosilicate cotton, ceramic fiber blocks		
	Heater	Alloy heating wire	6.0kW 7.8kW	
		6.0kW	7.8kW	
	Fan blade/motor	Axial flow fan blades, self-cooling high-temperature motor 25W		
	Exhaust port/cable port	Inner diameter 50mm, located at the back side/inner diameter 30mm, located at the back side		
Other additional mechanisms		Exhaust dampers (manual)		
Controllers	Temp. control method	3-stage PID		
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys		
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display		
		Setting temp. display: Red 4-digit LED digital display		
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)		
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation		
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)		
	Additional functions	Deviation correction, key lock, power failure compensation		
Heater circuit control	SSR drive			
Sensors	K thermocouple (Temp. controller)			
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, key lock functions		
Specifications	Internal dimensions (W×D×H mm)	450×450×450	600×600×600	
	External dimensions (W×D×H mm)	1200×800×1150	1350×950×1300	
	Internal capacity	91L	216L	
	Shelf load	30kg/layer		
	Shelf layers/shelf support spacing	9 layers/45mm	9 layers/60mm	
	Power supply (50/60Hz) rated current	Single phase AC220V 30A	3 phase AC380V 12.5A	
Weight	Approx. 160kg	Approx. 250kg		
Accessories	Shelf	Stainless steel wire mesh plate		
	Shelf	2 pcs	3 pcs	
	Supports	4 pcs	6 pcs	
Options		Shelf plate (1 shelf plate with 2 shelf supports), cable ports (30/50mm), micro printer, data logger, automatic dampers, combination warning lights (standby/running/fault), external communication function (RS485), temperature output terminals (4~20mA), external alarm output terminals, time-up output terminals, central monitoring software, touch screen controller		

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Stirrers & Shakers	11
Options	12

Forced Convection Ovens | Energy-Saving

DNE401C/411C/601C/611C/811C/911C

Operating temp. range	RT+10~210°C	Temp. uniformity	±1.5% (at 210°C)	Internal capacity	90L	150L	300L	540L
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Power consumption reduced by over 30%, an environmentally friendly constant temperature oven that reduces CO₂ emissions.

Features

- Significantly reduces power consumption and features programmable functions in an environmentally friendly constant temperature oven. Achieves a 30% energy-saving design (compared to previous products) during constant temperature operation through airtight thermal insulation in the chamber.
- Maximum temperature reach time shortened by up to 15 min (compared to previous products). Standby time and recovery time are also reduced, achieving operational efficiency.
- Able to implement various operating modes and is equipped with calibration correction functions, power failure reset mode selection, and user-defined information save and recall functions, among other support features.
- Able to repeat program operation for up to 99 segments or 99 modes. Equipped with accumulated function for powered/operating time.
- Various optional features allow for system upgrades based on user needs.

Safety

- Features self-diagnostic circuits, independent overheating preventers with digital settings, overcurrent leakage protection, key locks, and other safety functions.



Specifications

Model		DNE401C	DNE411C	DNE601C	DNE611C	DNE811C	DNE911C	
System		Forced convection						
Performance	Operating temp. range	Room temp. +10~210°C						
	GB standard	Temp. fluctuation	±0.5°C (at 210°C)					
		Temp. uniformity	±1.5% (at 210°C)					
	JTM standard	Temp. adjusting accuracy	±0.5°C (at 210°C)					
Temp. distribution accuracy		±2.0°C (at 210°C)						
Max. temp. reaching time		Approx. 60 min		Approx. 70 min		Approx. 45 min		
Composition	Interior material		Stainless steel plate					
	Exterior material		Cold rolled steel plate with chemical proofing coating					
	Insulating material		Glass fiber					
	Heater		Stainless steel heating pipe		1.1kW		1.2kW	
	Forced air motor		High-temperature self-cooling motor		10W		30W	
	Cable port		Inner diameter 33mm (one at upper right side)				30W	
	Intake vent		Inner diameter 33mm (one at lower right side)				30W×2	
Exhaust vent		I.D. 33mm×2, located on the top				I.D. 33mm×2, located at the back		
Controllers	Temp. control method		PID control					
	Temp. setting method		Use special function menu keys and ▲/▼ keys to realize digital setting					
	Temp. display method		Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Orange 5-digit LED digital display					
	Timer/timer resolution		1 min~99 hours 59 min/1 min					
	Operation functions		Fixed temp. operation, auto start, quick auto stop, auto stop, program operation					
	Program mode		Program operation max 99 segments, repeat operation function					
	Additional functions		Power/accumulated running time function (65535 hours), time display, deviation correction function, cumulative power consumption, CO ₂ emission, heater output, cumulative power-on time, power failure recovery mode selection, user defined information login					
Sensors		K thermocouple (Temp. controller)						
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, key lock functions						
Specifications	Internal dimensions (W×D×H mm)		450×450×450		600×500×500		600×500×1000	
	External dimensions (W×D×H mm)		580×646×860		730×695×910		730×695×1675	
	Internal capacity		90L		150L		300L	
	Shelf load		15kg/layer					
	Shelf layers/shelf support spacing		11 layers/30mm		13 layers/30mm		29 layers/30mm	
	Power supply (50/60Hz) rated current		AC115V, 10A		AC220V, 5.5A		AC220V, 11.5A	
Weight		Approx. 63kg		Approx. 77kg		Approx. 92kg		
Accessories	Shelf		Stainless punching mesh plate				2 pcs	
	Supports		4 pcs				8 pcs	
	Stand		ON61C				-	
Options	Stacking fittings		ODN26C		ODN28C		-	
	Others		Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), data logger, combination warning lights (standby/running/fault), viewing window, external communication function (RS485), temperature output terminals (4~20mA), external alarm output terminals, time-up output terminals					

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

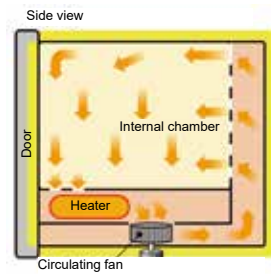
- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker
- CE Certification



Control panel



Structural diagram



DNE structural diagram

Internal chamber

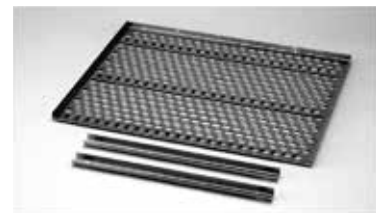


[DNE401C/411C]



[DNE911C]

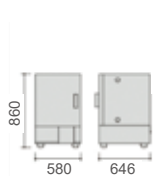
Shelf (support)



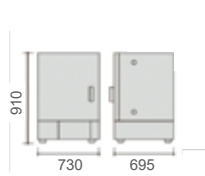
Cable port (standard configuration)



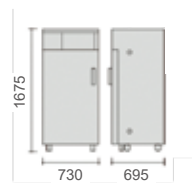
Dimension diagram (mm)



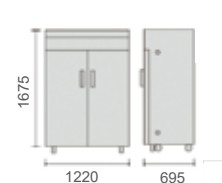
[DNE401C/411C]



[DNE601C/611C]



[DNE811C]



[DNE911C]

- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
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- Water Purifiers 7
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Forced Convection Ovens | Energy-saving, Variable Airflow

DNF401C/411C/601C/611C/811C/911C

Operating temp. range	RT+10~260°C	Temp. uniformity	±1.5% (at 260°C)	Internal capacity	90L	150L	300L	540L
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Variable airflow, power consumption reduced by over 30%, an environmentally friendly constant temperature oven that reduces CO₂ emissions.

Features

- Equipped with variable airflow mechanism: 10-step variable airflow + airflow [0] (stop)(401C/411C/601C/611C), 10-step variable airflow (811C/911C).
- Achieve 30% energy-saving during constant temperature operation through airtight thermal insulation in the chamber (compared to previous products).
- Maximum temperature reach time shortened by up to 15 min (compared to previous products). Standby time and recovery time are also reduced, achieving operational efficiency.
- High airtightness prevents dust and debris from entering the chamber.
- Fixed temp. operation, 99 segments program operation, auto stop operation, auto start operation.
- Temperature and time setting displays, deviation corrections, etc., can be achieved through the VFD fluorescent display.
- Various optional features allow for system upgrades based on user needs.

Safety

- Equipped with self-diagnostic circuits, independent overheating preventers with digital settings, overcurrent leakage protection, key locks, and other safety functions.



Specifications

Model		DNF401C	DNF411C	DNF601C	DNF611C	DNF811C	DNF911C				
System		Forced convection + natural convection				Forced convection					
Performance	Forced air (airflow 10)	Operating temp. range	Room temp. +10~260°C								
		GB standard	Temp. fluctuation	±0.5°C (at 260°C max airflow setting)							
			Temp. uniformity	±1.5% (at 260°C max airflow setting)							
		JTM standard	Temp. adjusting accuracy	±0.5°C (at 260°C max airflow setting)							
	Temp. distribution accuracy		±2.5°C (at 260°C max airflow setting)								
	Max. temp. reaching time	Approx. 90 min		Approx. 60 min		Approx. 100 min					
	Natural convection (airflow 0)	Operating temp. range	Room temp. +25~120°C								
		Temp. adjusting accuracy	±0.3°C (airflow 0 at 120°C)								
Temp. distribution accuracy		±3°C (airflow 0 at 120°C)									
Max. temp. reaching time		Approx. 25 min									
Composition	Interior material	Stainless steel plate									
	Exterior material	Cold rolled steel plate with chemical proofing coating									
	Insulating material	Centrifugal glass wool									
	Heater	Stainless steel heating pipe		0.6kW×2		0.83kW×2		1.35kW×2		1.65kW×2	
		Forced air motor	DC brushless motor (600~1500rpm) variable (10 segments)								
	Cable port	30W									
	Cable port	Inner diameter 33mm (upper on the right)									
	Intake vent	Inner diameter 33mm (lower on the right)									
Exhaust vent	Inner diameter 50mm×1, located on the back										
Controllers	Temp. control method	PID control									
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys									
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display									
		Setting temp. display: Orange 5-digit LED digital display									
	Timer/timer resolution	1 min~99 hours 59 min/1 min									
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation									
	Program mode	Program operation max 99 segments, repeat operation function									
	Additional functions	Power/accumulated running time function (65535 hours), clock display, deviation correction function, cumulative power consumption, CO ₂ emission, heater output, cumulative power-on time, power failure recovery mode selection, user defined information login, variable airflow function (DNF411C/611C)									
Sensors	K thermocouple (Temp. controller)										
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, key lock functions									
Specifications	Internal dimensions (W×D×H mm)	450×450×450		600×500×500		600×500×1000		1090×500×1000			
	External dimensions (W×D×H mm)	580×646×897		730×695×947		730×695×1685		1220×695×1685			
	Internal capacity	90L		150L		300L		540L			
	Shelf load	15kg/layer									
	Shelf layers/shelf support spacing	11 layers/30mm		13 layers/30mm		29 layers/30mm		29 layers/30mm×2 columns			
	Power supply (50/60Hz) rated current	AC115V 11A	AC220V 6A	AC115V 15A	AC220V 8A	AC220V 13A	AC220V 16A				
Weight	Approx. 61kg		Approx. 90kg		Approx. 135kg		Approx. 210kg				
Accessories	Shelf	Stainless punching mesh plate				4 pcs		8 pcs			
	Supports	2 pcs				8 pcs		16 pcs			
Options	Stand	ON61C				-		-			
	Stacking fittings	ODN26C		ODN28C		-		-			
	Others	Shelf (1 shelf with 2 supports), cable port (30/50mm), data logger, combination warning light (standby/running/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal									

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker
- CE Certification



Control panel



Internal chamber



[DNF601C/611C]



[DNF911C]

Damper operation

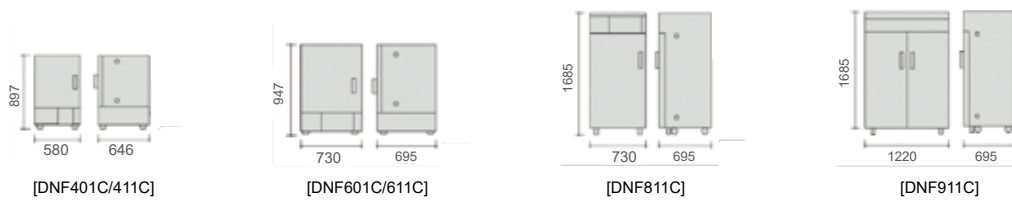


Exhaust vent (back of main unit)



Sterilizers	1
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Stirrers & Shakers	11
Options	12

Dimension diagram (mm)



Forced Convection Ovens | Rapid heating and cooling

DKG611/611V/811/811V

Forced
ConvectionAutomatic
Overheating
PreventerOverheating
PreventsSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
FunctionOvercurrent
Leakage Circuit
BreakerMade in
Japan

Operating temp. range RT+30~260°C

Temp. distribution accuracy ±2.5°C (260°C)

Internal capacity 150L 300L

Faster heat-up and cool-down cycles improve productivity with easy operation.

Features

- Heat-up and cool-down times have been reduced by over 50% compared with previous models, significantly improving operational efficiency.
- A front-mounted manual adjustment valve enables synchronized intake and exhaust, accelerating cool-down.
- Horizontal airflow delivers high-precision temperature control, even under load.
- The door gasket is made of fluororubber, providing a silicone-free design. (DKG611V/811V)
- Designed for AC200-220V power supply.



Specifications

Model	DKG611	DKG611V	DKG811	DKG811V	
System	Forced convection and ventilation				
Performance	Temp. control range	Room temp. +30~260°C			
	Temp. adjusting accuracy	JTM K05±0.5°C (260°C)			
	Time fluctuation	JIS 1°C (260°C)	JIS 2°C (260°C)		
	Temp. distribution accuracy	JTM K05±2°C (200°C)/±2.5°C (260°C)			
	Temp. slope	JIS 10°C (260°C)	JIS 15°C (260°C)		
	Max. temp. reaching time	Within 45 min (25→260°C)		Within 50 min (25→260°C)	
	Temp. fall time	Approx. 40 min (260→50°C)		Approx. 50 min (260→50°C)	
Composition	Interior material	Stainless steel plate			
	Door side seal	Silicone rubber	Fluororubber	Silicone rubber	Fluororubber
	Heater	2.6~3.16kW		3.6~4.36kW	
	Cable port	Inner diameter 30mm×1, located on the right			
	Intake vent	Bottom of heating chamber (manual damper for opening/closing)			
	Exhaust vent	Φ80mm (upper part of main unit)			
Controllers	Exhaust damper	Manual damper for linked intake and exhaust			
	Controllers	VS6 (PID control)			
	Operation functions	Fixed temp. operation/program operation/quick auto stop operation/auto stop operation/auto start operation/program auto start operation			
	Program mode	6 modes (PrG1:30 segments, PrG 2~3: 15 segments, PrG4~6:10 segments) waiting function, repeat function, hold function, skip function			
Safety functions	Additional functions	Deviation correction, key lock, power failure compensation			
	Self-diagnostic circuit (automatic overheating prevention, temperature sensor abnormality, heater disconnection, SSR short circuit, main relay fault, data logger error, internal communication error, temperature measurement error) overheat preventer/overcurrent leakage protection, door switch, temperature fuse, external alarm output terminal				
Specifications	Internal dimensions	600×500×500mm		600×500×1000mm	
	External dimensions	770×696×985mm 770×846×985mm (including exhaust pipe)		770×696×1674mm 770×846×1674mm (including exhaust pipe)	
	Internal capacity	150L		300L	
	Shelf layers/shelf support spacing	7 layers, 60mm		15 layers, 60mm	
	Shelf load	15kg/layer (total weight capacity 35kg)		15kg/layer (total weight capacity 75kg)	
	Power supply (50/60Hz)	1ΦAC200~220V 13.5~15.0A		1ΦAC200~220V 18.5~20.5A	
	Circuit breaker capacity	20A		30A	
	Weight	Approx. 110kg		Approx. 155kg	
Accessories	Shelf	Stainless steel plate		Stainless steel plate	
		2 pcs		4 pcs	
	Supports	4 pcs		8 pcs	

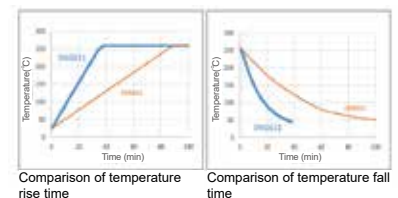
Control panel



Internal chamber



Heating and cooling time comparison



1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Natural Convection Ovens | High-Function, Touch Panel

DVT410C/610C

Operating temp. range RT+10~300°C

Temp. uniformity ±3% (at 300°C)

Internal capacity 117L 188L

High-end drying oven with programmable control functions allows for quick program settings.

Features

- 7-inch touch screen for easy operation with three operation modes, including fixed temp. operation, program operation, timing operation. Standard 3-level authorization login.
- 100 programs, each program maximum 30 segments. Standard data storage function, data storage capacity approximately 10 years.
- Temperature rise curve tracking function, program operation mode, able to visually display set temperature and achieved temperature curve, providing reference for users to set reasonable temperature rise curve.
- Automatically stops heating upon door opening to protect user samples.

Safety

- Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, and a three-level authorization management system, automatically stops heating upon door opening.



Specifications

Model		DVT410C	DVT610C
System		Natural convection	
Performance	Operating temp. range	Room temp. +10~300°C	
	GB standard	Temp. fluctuation	±1°C (at 300°C)
		Temp. uniformity	±3% (at 300°C)
Max. temp. reaching time		≤120 min	
Composition	Interior material	Stainless steel plate	
	Exterior material	Cold rolled steel plate with chemical proofing coating	
	Insulating material	Rock wool+centrifugal glass wool	
	Heater	Stainless steel heating pipe	
		1.6kW 1.3kW x 2	
	Cable port	Inner diameter: 33mm×1, located on the right	
Exhaust vent	I.D. 33mm×2, located on the top		
Controllers	Temp. control method	3-stage PID	
	Temp. setting method	7-inch color touch screen	
	Temp. display method	7-inch color touch screen	
	Timer	1 min~99 h 59 min	
	Operation functions	Fixed temp. operation, program operation, timing operation	
	Program mode	100 Programs with 30 segments each	
	Additional functions	Temperature history curve, alarm history records, operation log, data export function, language switching (Chinese, Japanese, English), calibration function, power failure compensation function, screen brightness adjustment, three-level authorization function	
Sensors	Temperature controller: K-type thermocouple, overheating protection: Liquid expansion temperature controller		
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, and automatically stops heating upon door opening	
Specifications	Internal dimensions	450×520×500	600×570×550
	External dimensions (W×D×H mm)	610×690×960	760×740×1010
	Internal capacity	117L	188L
	Shelf load	30kg/layer	
	Shelf layers	12 layers	14 layers
	Support spacing	30mm	
	Power supply (50Hz) rated current	AC220V 7.5A	AC220V 12A
	Weight	Approx. 78kg	Approx. 93kg
Accessories	Shelf	Stainless steel wire shelf 2 pcs	
	Supports	4 pcs	
Options	Stand	ONK60C	
	Stacking fittings	ODK40C	
	Others	Shelf (1 shelf with 2 supports) cable port (30/50mm), micro printer, data logger, combination warning light (standby/running/fault), remote monitoring function (network port), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal	

Sterilizers	1
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Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

- Natural Convection
- Automatic Overheating Preventer
- Independent Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Internal chamber (DVT610C)



- Use high-temperature resistant silicone rubber sealing strips. Enhance sealing, ensuring stable performance.
- The internal stainless-steel construction offers strong corrosion resistance and is easy to clean.
- Shelf plates are made of stainless-steel wire mesh, highly increasing strength.

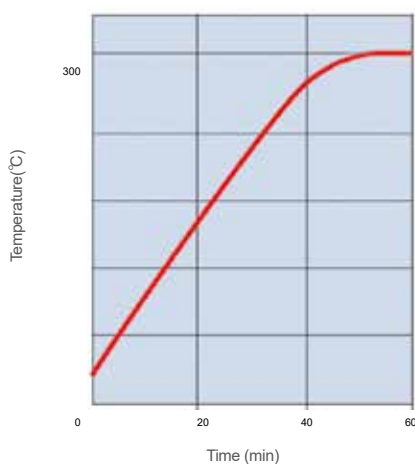
Control panel



Cable port (standard configuration)



Temperature rise curve



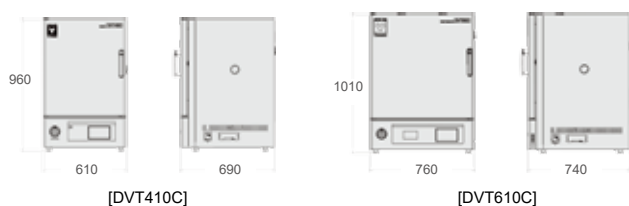
Exhaust vent (standard configuration)



Shelf (support)



Dimension diagram (mm)



- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

Natural Convection Ovens | Standard, Program Operation

DVS403C/413C/603C/613C

Operating temp. range RT+5~260°C

Temp. distribution accuracy ±5°C (at 260°C)

Internal capacity 99L 162L

The natural convection drying oven with program control function allows for quick program settings.



Features

- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. 6 modes with 90 segments program controller.
- Deviation correction and key locking through submenu keys.

Safety

- Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), independent overheating prevention, overcurrent leakage protection, key lock safety and other safety functions.

Specifications

Model		DVS403C	DVS413C	DVS603C	DVS613C
System		Natural convection			
Performance	Operating temp. range	Room temp. +5~260°C			
	GB standard	Temp. fluctuation	±1°C (at 260°C)		
		Temp. uniformity	±3% (at 260°C)		
	JTM standard	Temp. adjusting accuracy	±1°C (at 260°C)		
		Temp. distribution accuracy	±5°C (at 260°C)		
Max. temp. reaching time		Approx. 75 min (room temperature +5~260°C)			
Composition	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Insulating material	Rock wool + centrifugal glass wool			
	Heater	1.2kW		1.36kW	
	Viewing window (width×height mm)	250×280			
	Cable port	Inner diameter: 33mm×1, located on the right			
	Exhaust vent	I.D. 33mm×2, located on the top			
Controllers	Temp. control method	3-stage PID			
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display			
		Setting temp. display: Red 4-digit LED digital display			
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions	Fixed temp. operation, program operation, quick auto stop operation, auto stop operation, auto start operation			
	Program mode	Programmable controller with 3 modes (30 segments × 1, 15 segments × 2, 10 segments × 3)			
Additional functions	Deviation correction, key lock, power failure compensation				
Sensors	Temperature controller: K-type thermocouple; Overheating protection: Liquid expansion temperature controller				
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), independent overheating preventer, overcurrent leakage protection, and key lock functions			
Specifications	Internal dimensions (W×D×H mm)	450×490×450		600×540×500	
	External dimensions (W×D×H mm)	560×601×827		710×651×877	
	Internal capacity	99L		162L	
	Shelf load	15kg/layer			
	Shelf layers	11 layers		13 layers	
	Support spacing	30mm			
	Power supply (50/60Hz) rated current	AC115V 10.5A	AC220V 5.5A	AC115V 12A	AC220V 6.5A
Weight	Approx. 57kg		Approx. 72kg		
Accessories	Shelf	Stainless punching mesh plate 2 pieces, 1 of which is fixed to the chamber; do not disassemble			
	Supports	2 pcs			
	Stand	ON61C			
Options	Stacking fittings	OD40C		OD60C	
	Others	Shelf (1 shelf with 2 supports), cable port (30/50mm), micro printer, data logger, combination warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software			

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

- Natural Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Internal chamber (DVS403C/413C)



- Use high-temperature resistant silicone rubber sealing strips. Enhance sealing, ensuring stable performance.
- The internal stainless-steel construction offers strong corrosion resistance and is easy to clean.
- The shelf is made of perforated metal plate, significantly improving strength.

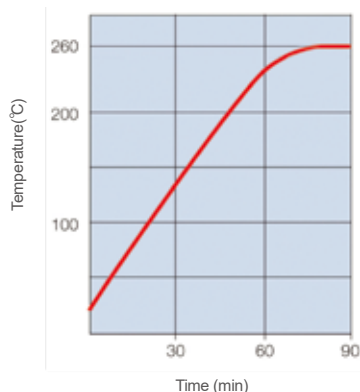
Control panel



Cable port (standard configuration)



Temperature rise curve



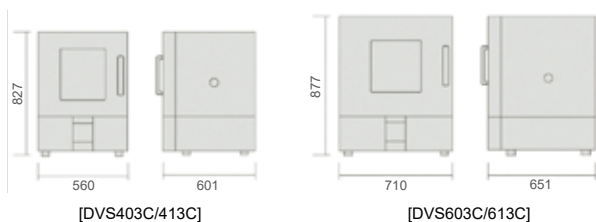
Exhaust vent (standard configuration)



Shelf (support)



Dimension diagram (mm)



Natural Convection Ovens | Basic Function Type

DY301C/311C/401C/411C/601C/611C

Natural Convection

Automatic Overheating Preventer

Overheating Preventer

Self-diagnostic Function

Overcurrent Leakage Circuit Breaker

Operating temp. range RT+10~280°C

Temp. gradient 30°C (at 280°C)

Internal capacity 28L 74L 153L

Ensures the basic functions of fixed temperature operation models.

Various function settings allow for simpler operation.

Features

- Easy operation, fixed temp. operation, auto stop operation, quick auto stop operation, and auto start operation.

Safety

- Equipped with self-diagnostic circuits (temperature sensor anomaly, temperature overheating prevention), leakage protection against overcurrent, and independent overheating preventer and other safety functions.



Specifications

Model		DY301C	DY311C	DY401C	DY411C	DY601C	DY611C	
System		Natural convection						
Performance	Operating temp. range	Room temp. +10~280°C						
	GB standard	Temp. fluctuation	±1°C (at 280°C)					
		Temp. uniformity	±3% (at 280°C)					
	JIS standard	Temp. variation	±2°C (at 280°C)					
		Temp. gradient	30°C (at 280°C)					
Temp. rise speed	6.9°C/min			4.3°C/min		1.7°C/min		
Maximum temp. rise time	Approx. 60 min			Approx. 70 min		Approx. 120 min		
Composition	Interior material	Stainless steel plate						
	Exterior material	Cold rolled steel plate with chemical proofing coating						
	Insulating material	Rock wool						
	Heater	Nichrome heating wire						
		0.9kW			1.36kW			
Exhaust vent	I.D. 33mm×2, located on the top							
Controllers	Temp. control method	PID control						
	Temp. setting method	Digital setting through function menu key and ▲/▼ keys						
	Temp. display method	Achieved temperature display: red 4-digit led, digital display						
		Setting temperature display: green 4-digit led, digital display						
	Timer	1 min~999 h 50 min						
	Operation functions	Fixed temp. operation, quick auto stop operation, auto stop operation, auto start operation						
	Additional functions	Deviation correction function						
	Heater circuit control	SSR drive						
Sensors	Temperature controller: K-type thermocouple, overheating protection: Liquid expansion temperature controller							
Safety device		Self-diagnostic function (temperature sensor abnormal, temperature overheating prevention), independent overheating prevention, overcurrent leakage protection switch						
Specifications	Internal dimensions (W×D×H mm)	300×310×300			450×410×400		600×510×500	
	External dimensions (W×D×H mm)	400×440×622			550×540×722		700×640×822	
	Internal capacity	28L			74L		153L	
	Shelf load	15kg/layer						
	Shelf layers	6 layers			9 layers		12 layers	
	Support spacing	35mm						
	Power supply (50/60Hz) rated current	AC115V 8A	AC220V 5A	AC115V 13.5A	AC220V 7.5A	AC115V 13.5A	AC220V 7.5A	
	Weight	Approx. 23kg			Approx. 38kg		Approx. 56kg	
Accessories	Shelf	Stainless punching mesh plate						
	Supports	4 pcs						
Options	Stand	ONS30C			ONS60C			
	Stacking fittings	ODK80C			ODK82C		ODK84C	
	Others	Shelf (1 shelf plate with 2 shelf supports), cable port (30/50mm)						

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Natural Convection Ovens | Economical Type, Fixed Temp. Operation

DX302C/312C/402C/412C/602C/612C

Natural
ConvectionAutomatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
FunctionOvercurrent
Leakage Circuit
Breaker

Control temp. range DX302C/312C/402C/412C: 40~300°C DX602C/612C: 40~280°C

Temp. distribution accuracy ±10°C

Internal capacity 28L 74L 153L

Maximum temperature of 300°C, highly practical drying oven.



Features

- Easy operation, available for fixed temp., quick auto stop, auto stop and auto start operations.
- Digital setting through special operation function menu keys and ▲/▼ keys. Able to set overheating protection, deviation correction, and key lock.

Safety

- Equipped with self-diagnostic circuits (temperature sensor anomaly), power failure compensation function, deviation correction function, leakage protection against overcurrent, independent overheating preventer, and other safety functions.

Specifications

Model		DX302C	DX312C	DX402C	DX412C	DX602C	DX612C	
System		Natural convection						
Performance	Control temp. range	40~300°C				40~280°C		
	GB standard	Temp. fluctuation	±1°C (at 300°C)				±1°C (at 280°C)	
		Temp. uniformity	±3% (at 300°C)				±3% (at 280°C)	
	JTM standard	Temp. adjusting accuracy	±1°C (at 300°C)				±1°C (at 280°C)	
		Temp. distribution accuracy	±10°C (at 300°C)				±10°C (at 280°C)	
Max. temp. reaching time	Approx. 50min		Approx. 100 min		Approx. 110 min			
Composition	Interior material	Stainless steel plate						
	Exterior material	Cold rolled steel plate with chemical proofing coating						
	Insulating material	Rock wool						
	Heater	0.9kW		1.36kW				
	Exhaust vent	I.D. 33mm×2, located on the top						
Controllers	Temp. control method	PID control						
	Temp. setting method	Digital setting through function menu key and ▲/▼ keys						
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display						
		Setting temp. display: Red 4-digit LED digital display						
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)						
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop operation						
	Additional functions	Deviation correction, key lock, power failure compensation						
	Heater circuit control	SSR drive						
Sensors	Temperature controller: K-type thermocouple, overheating protection: Liquid expansion temperature controller							
Safety device		Self-diagnostic function (temperature sensor anomaly, automatic overheating prevention), key lock function, independent overheating preventer, overcurrent leakage protection switch						
Specifications	Internal dimensions (W×D×H mm)	300×310×300		450×410×400		600×510×500		
	External dimensions (W×D×H mm)	400×440×622		550×540×722		700×640×822		
	Internal capacity	28L		74L		153L		
	Shelf load	15kg/layer						
	Shelf layers	6 layers		9 layers		12 layers		
	Support spacing	35mm						
Power supply (50/60Hz) rated current	AC115V 8A		AC220V 5A		AC115V 13.5A		AC220V 7.5A	
	AC115V 8A		AC220V 5A		AC115V 13.5A		AC220V 7.5A	
Weight	Approx. 23kg		Approx. 38kg		Approx. 56kg			
Accessories	Shelf	Stainless punching mesh plate						
		2 pcs						
	Supports	4 pcs						
Options	Stand	ONS30C		ONS60C				
	Stacking fittings	ODK80C		ODK82C		ODK84C		
	Others	Shelf (1 shelf plate with 2 shelf supports), cable port (30/50mm)						

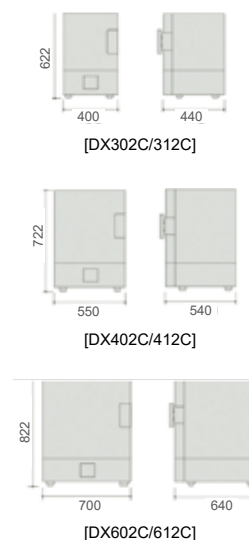
DX302C/312C



Internal chamber (DX402C/412C)



Dimension diagram (mm)



1 Sterilizers

2 Granulation
and Spray
Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma
Equipment7 Water
Purifiers

8 Baths

9 Water
Circulators10 Rotary
Evaporators11 Stirrers &
Shakers

12 Options

Inert Ovens | N₂ Replacement, Oxygen-free Heating

DN410IC/610IC

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Operating temp. range RT+10~360°C Temp. uniformity ±1.5% (at 360°C) Internal capacity 95L 223L

Specific constant temperature ovens for thermal treatment experiments in an oxygen-free environment.



Features

- Support performing high-temperature resistance tests and thermal processing at 360°C.
- Wide operating temperature range, high accuracy in temperature control.
- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. Programmable controller with 3 modes.
- Flow setting and introduction through N₂ flow meter.

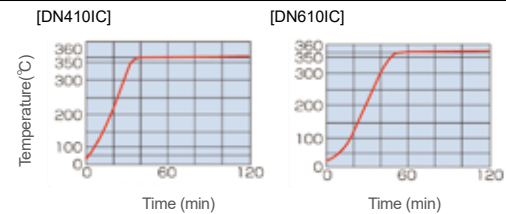
Safety

- Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.

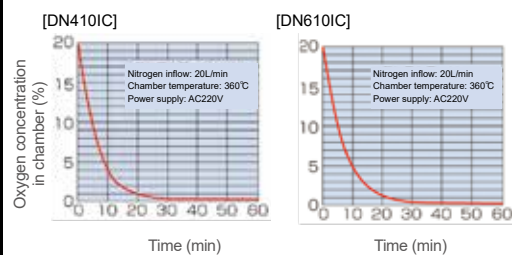
Specifications

Model		DN410IC	DN610IC
System		Forced convection	
Performance	Operating temp. range	Room temp. +10~360°C	
	GB standard	Temp. fluctuation	±0.2°C (at 360°C)
		Temp. uniformity	±1.5% (at 360°C)
	JTM standard	Temp. adjusting accuracy	±0.2°C (at 360°C)
Temp. distribution accuracy		±3.0°C (at 360°C)	
Max. temp. reaching time		Approx. 60 min	
Composition	Interior material	Stainless steel plate	
	Exterior material	Cold rolled steel plate with chemical proofing coating	
	Insulating material	Glass wool, rock wool	
	Heater	Stainless steel heating tube, 3.0kW	Stainless steel heating tube, 4.0kW
	Fan blade/motor	Centrifugal fan blades, high-temperature self-cooling motor 30W	
	Flow meter	Maximum flow: 40L/min	
N ₂ inlet interface		Φ8	
Controllers	Temp. control method	3-stage PID	
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys	
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display	
		Setting temp. display: Red 4-digit LED digital display	
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)	
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation	
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)	
	Additional functions	Deviation correction, key lock, power failure compensation	
	Sensors	K thermocouple (temp. controller and overheating protector)	
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions	
Specifications	Internal dimensions (W×D×H mm)	470×450×450	620×600×600
	External dimensions (W×D×H mm)	640×695×915	790×846×1065
	Internal capacity	95L	223L
	Shelf load	30kg/layer	
	Shelf layers/shelf support spacing	12 layers/30mm	17 layers/30mm
	Power supply (50/60Hz) rated current	AC220V 14A	AC220V 18.5A
Weight	Approx. 80kg	Approx. 120kg	
Accessories	Shelf	Stainless steel wire mesh plate 2 pcs	
	Supports	4 pcs	
Options	Stand	OH41C	OH61C
	Others	Shelf plate, cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, exhaust vent, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software	

Temperature rise curve



N₂ replacement performance curve



N₂ inlet (outer diameter 9mm)



- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

Inert Ovens | Anaerobic, Oxygen Concentration 5000ppm

DF611IC, DH611IC

Operating temp. range DF: RT+10~260°C DH: RT+10~360°C

Temp. deviation DF: ±4.0°C (at 260°C) DH: ±5.0°C (at 360°C)

High-precision constant temperature ovens for thermal treatment in an oxygen-free environment.

Features

- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. Programmable controller with 3 modes.
- Overheat protection, deviation correction and key locking through submenu keys.
- Flow setting and introduction through N₂ flow meter.
- Real-time display of oxygen concentration in the chamber (optional).

Safety

- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection, key lock safety and other functions.



Specifications

Model		DF611IC	DH611IC	
System		Forced convection		
Operating temp. range		Room temp. +10~260°C		
Performance	GB standard	Temp. fluctuation	±0.1°C (at 260°C)	
		Temp. deviation	±2°C (at 100°C), ±3°C (at 200°C), ±4°C (at 260°C)	
	JTM standard	Temp. adjusting accuracy	±0.1°C (at 260°C)	
		Temp. distribution accuracy	±2°C (at 260°C)	
Max. temp. reaching time	Approx. 60 min (to 260°C)	Approx. 80 min (to 360°C)		
Lowest oxygen concentration		≤5000ppm		
Composition	Interior material		Stainless steel plate	
	Exterior material		Cold rolled steel plate with chemical proofing coating	
	Insulating material		Rock wool+centrifugal glass wool	
	Heater		Stainless steel heating tubes with fins	
			3.0kW	3.75kW
	Fan blade/motor		Axial fan blades, motor 20W×1	
	Cable port		I.D. 30mm, located at the back	
	Exhaust vent		8mm tapered joint	
Intake port		Rc3/8 threaded interface		
Controllers	Temp. control method		3-stage PID	
	Temp. setting method		Digital setting through special function menu keys and ▲/▼ keys	
	Temp. display method		Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display	
	Timer		1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)	
	Operation functions		Fixed temp. operation, auto start, quick auto stop, auto stop, program operation	
	Program mode		Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)	
	Additional functions		Deviation correction, key lock, power failure compensation	
Sensors		K thermocouple (temp. controller and overheating protector)		
Safety device		Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection) , overheating prevention, overcurrent leakage protection, key lock safety and other functions		
Specifications	Internal dimensions		600×600×600	
	External dimensions (W×D×H mm)		1200×780×1000	
	Internal capacity		216L	
	Shelf load		30kg/layer	
	Shelf layers/shelf support spacing		9 layers/60mm	
	Weight		Approx. 156kg	
Power supply (50/60Hz) rated current		AC220V 14A	AC220V 17.5A	
Accessories	Shelf		Stainless steel wire mesh plate	
			3 pcs	
	Supports		6 pcs	
Options	Stand		OP63/66C	
	Others		Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller	

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Inert Ovens | Anaerobic, Oxygen Concentration 20ppm, High Temp.

DNN430C/630C/460C/660C

Forced Convection | Automatic Overheating Preventer | Overheating Preventer | Self-diagnostic Function | Overcurrent Leakage Circuit Breaker

Max. operating temp.	DNN430C/630C: 360°C	DNN460C/660C: 600°C	Oxygen concentration	20ppm	Internal capacity	91L	261L
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An atmosphere furnace with an oxygen concentration below 20 ppm and a maximum operating temperature of 600°C, suitable for high-temperature thermal treatment in an oxygen-free environment.



Features

- Maximum operating temperatures of 360°C and 600°C, with oxygen concentrations below 20ppm, primarily applied in electronic component annealing, LTCC removal, glass substrate annealing, ceramic debinding, etc.
- High gas-tightness pressure chamber construction, short oxygen concentration reaching time, low N₂ consumption.
- Maintaining high gas-tightness through magnetic sealing and a water-cooling mechanism to protect sealing components from thermal effects.
- Quick heating and cooling achievable, with adjustable heating and cooling rates.
- Equipped as standard with a system that condenses and recovers exhaust-gas condensate.
- Liquid crystal touchscreen operation, with both automatic and manual operation modes.

Safety

- Equipped with door detection switch, temperature overheating preventer, oxygen concentration abnormality detection, nitrogen pressure detection, chamber pressure testing, nitrogen flow detection, cooling water flow detection, leakage sensor, overcurrent leakage protection and other devices.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Specifications

Model		DNN430C	DNN630C	DNN460C	DNN660C	
System		Nitrogen replacement + Forced convection				
Performance	Operating temp. range	Room temp. +50~360°C		Room temp. +50~600°C		
	JTM standard	Temp. adjusting accuracy	±0.5°C (at 360°C)		±0.5°C (at 600°C)	
		Temp. distribution accuracy	±5°C (at 360°C)		±8.0°C (at 600°C)	
	Max. temp. reaching time	Approx. 100 min	Approx. 80 min	Approx. 120min	Approx. 150 min	
	Oxygen concentration	Below 20ppm				
	Oxygen concentration reaching time	≤20 min (250L/min nitrogen)	≤25 min (250L/min nitrogen)	≤20 min (250L/min nitrogen)	≤25 min (250L/min nitrogen)	
Composition	Interior material	Stainless steel plate				
	Exterior material	Cold rolled steel plate with chemical proofing coating				
	Insulating material	Aluminosilicate cotton				
	Heating method	Stainless steel heating pipe		Alloy heating wire		
	Heating power	Main heater	6.0kW	9.0kW	9.0kW	13.5kW
		N ₂ preheating	1.0kW			
Cooling mechanism	Stainless steel cooling water heat exchanger					
Controllers	Temp. control method	PID control				
	Temp. controller	Liquid crystal touchscreen + PLC				
	Operation functions	Manual operation, automatic operation				
	Program mode	9 program operations, each program can set 9 segments (expandable)				
	Additional functions	3-level authorization login				
	Heater circuit control	SSR drive				
Sensors	K-type thermocouple (temperature control and overheating prevention)					
Safety device	Door detection switch, overheating preventer, oxygen concentration abnormality, temperature overheating of N ₂ preheating, low water pressure detection, chamber pressure testing, low N ₂ pressure detection, cooling water flow detection, N ₂ flow detection, fan overload detection, overcurrent leakage protection, etc.					
Specifications	Internal dimensions	450×450×450	660×600×660	450×450×450	660×600×660	
	External dimensions (W×D×H mm)	1090×1170×1570	1300×1320×1780	1240×1010×1750	1450×1160×1930	
	Internal capacity	91L	261L	91L	261L	
	Shelf layer/spacing	12 layers/30mm	19 layers/30mm	12 layers/30mm	19 layers/30mm	
	Exhaust vent	40KF flange				
	Nitrogen inlet	Rc1/2				
	Cooling water inlet	Rc3/4				
	Hot water outlet	Rc3/4×2				
	Power supply (50/60Hz) rated current	3 phase AC380V 16A	3 phase AC380V 25A	3 phase AC380V 24A	3 phase AC380V 28A	
	Weight	Approx. 800kg	Approx. 1000kg	Approx. 800kg	Approx. 1000kg	
Options	Shelf plate, vacuum pump, temperature data logger, multicolor light tower, Ethernet communication, UPS backup power supply, scanner, PC components, temperature measurement components, water leak detection, etc.					

Explosion-proof Ovens | Explosion-Proof, Precision

DF411SC/611SC, DH411SC/611SC

Forced
ConvectionAutomatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
FunctionOvercurrent
Leakage Circuit
Breaker

Max. operating temp. DF: RT+10~260°C DH: RT+10~360°C

Temp. deviation DF: ±4°C (at 260°C) DH: ±5°C (at 360°C)

Internal capacity 91L 216L

Precision constant temperature ovens equipped with explosion pressure relief device.

Features

- Featuring a relief safety door (explosion port) and a robust interlocked door knob for secure body and door fastening.
- Contain the following interlock functions:
The device operates under locked door conditions via the door locking mechanism.
An explosion detection switch is installed on the ceiling; once activated, operation will be interrupted.
- Easy to operate, fixed temp. operation, program operation, quick auto stop operation, auto stop operation, and auto start operation.
- Quick exhaust and cooling through exhaust dampers.

Safety

- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.



Specifications

Model		DF411SC	DF611SC	DH411SC	DH611SC	
System		Forced convection and ventilation				
Operating temp. range		Room temp. +10~260°C		Room temp. +10~360°C		
Performance	GB standard	Temp. fluctuation ±0.2°C (at 260°C)		±0.3°C (at 360°C)		
		Temp. deviation ±2°C (at 100°C), ±3°C (at 200°C), ±4°C (at 260°C)		±2°C (at 100°C), ±3°C (at 200°C), ±4°C (at 300°C), ±5°C (at 360°C)		
	JTM standard	Temp. adjusting accuracy ±0.1°C (at 260°C)		±0.2°C (at 360°C)		
		Temp. distribution accuracy ±2.5°C (at 260°C)		±3.0°C (at 360°C)		
Max. temp. reaching time		Approx. 60 min (to 260°C)		Approx. 80 min (to 360°C)		
Composition	Interior material		Stainless steel plate			
	Exterior material		Cold rolled steel plate with chemical proofing coating			
	Insulating material		Rock wool+centrifugal glass wool			
	Heater		Stainless steel heating tubes with fins			
			2.1kW	3.0kW	2.7kW	3.75kW
	Fan blade/motor		Axial fan blades, motor 20W×1			
	Cable port		I.D. 30 mm, located at the back			
	Other additional mechanisms		Relief safety door (explosion port), exhaust vent (manual)			
	Temp. control method		3-stage PID			
	Temp. setting method		Digital setting through special function menu keys and ▲/▼ keys			
Controllers	Temp. display method		Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display			
	Timer		1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions		Fixed temp. operation, auto start, quick auto stop, auto stop, program operation			
	Program mode		Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)			
	Additional functions		Deviation correction, key lock, power failure compensation			
	Heater circuit control		SSR drive			
	Sensors		K thermocouple (temp. controller and overheating protector)			
	Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions			
Specifications	Internal dimensions (W×D×H mm)		450×450×450	600×600×600	450×450×450	600×600×600
	External dimensions (W×D×H mm)		1050×630×1250	1200×780×1400	1050×630×1250	1200×780×1400
	Internal capacity		91L	216L	91L	216L
	Shelf load		30kg/layer			
	Shelf layers/shelf support spacing		9 layers/45mm	9 layers/60mm	9 layers/45mm	9 layers/60mm
	Power supply (50/60Hz) rated current		AC220V 10A	AC220V 14A	AC220V 13A	AC220V 17.5A
	Weight		Approx. 78kg	Approx. 109kg	Approx. 78kg	Approx. 109kg
Accessories	Shelf		Stainless steel wire mesh plate			
			2 pcs	3 pcs	2 pcs	3 pcs
	Supports		4 pcs	6 pcs	4 pcs	6 pcs
Options	Stand		OP42C	OP62C	OP42C	OP62C
	Others		Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller			

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

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Explosion-proof Ovens | Explosion-proof, Precision High-capacity

DF811SC/1011SC, DH811SC/1011SC

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker



Specifications

Model		DF811SC	DF1011SC
System		Forced convection and ventilation	
Operating temp. range		Room temp. +10~200°C	
GB standard	Temp. fluctuation	±0.5°C (at 200°C)	
	Temp. deviation	±2°C (at 100°C), ±3°C (at 200°C)	
JTM standard	Temp. adjusting accuracy	±0.2°C (at 200°C)	
	Temp. distribution accuracy	±3.0°C (at 200°C)	
Max. temp. reaching time		Approx. 60 min (to 200°C)	
Heater		4.5kW	6.0kW
Fan blade/motor		Axial fan blades, motor 20W×1	Axial fan blades, motor 20W×2
Internal dimensions (W×D×H mm)		800×800×800	1000×1000×1000
External dimensions (W×D×H mm)		1500×1015×1742	1700×1215×1932
Internal capacity		512L	1000L
Power supply (50/60Hz)		3 phase AC380V 7.5A	3 phase AC380V 10A
Weight		Approx. 350kg	Approx. 450kg

Model		DH811SC	DH1011SC
System		Forced convection and ventilation	
Operating temp. range		Room Temp. +10~300°C	
GB standard	Temp. fluctuation	±0.3°C (at 300°C)	
	Temp. deviation	±2°C (at 100°C), ±3°C (at 200°C), ±5°C (at 300°C)	
JTM standard	Temp. adjusting accuracy	±0.3°C (at 300°C)	
	Temp. distribution accuracy	±5.0°C (at 300°C)	
Max. temp. reaching time		Approx. 80 min (to 300°C)	
Heater		6.9kW	9.0kW
Fan blade/motor		Axial fan blades, motor 20W×1	Axial fan blades, motor 20W×2
Internal dimensions (W×D×H mm)		800×800×800	1000×1000×1000
External dimensions (W×D×H mm)		1500×1015×1742	1700×1215×1932
Internal capacity		512L	1000L
Power supply (50/60Hz)		3 phase AC380V 11A	3 phase AC380V 14.5A
Weight		Approx. 350kg	Approx. 450kg

Explosion-proof Ovens | Explosion-proof, 500°C, Precision

DH450SC

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power failure Compensation Function
- Overcurrent Leakage Circuit Breaker



Specifications

Model		DH450SC
System		Forced convection and ventilation
Operating temp. range		Room temp. +10~500°C
GB standard	Temp. fluctuation	±1.0°C (at 500°C)
	Temp. deviation	±2°C (at 100°C) ±3°C (at 200°C) ±4°C (at 300°C) ±6°C (at 400°C) ±8°C (at 500°C)
JTM standard	Temp. adjusting accuracy	±0.5°C (at 500°C)
	Temp. distribution accuracy	±5.0°C (at 500°C)
Max. temp. reaching time		Approx. 60 min
Heater		6.0kW
Fan blade/motor		Axial flow fan, self-cooling high-temp. motor 25W × 1
Internal dimensions		450×450×450
External dimensions (W×D×H mm)		1200×800×1550
Internal capacity		91L
Power supply (50/60Hz)		Single phase AC220V 30A
Weight		Approx. 210kg

Ovens for Labware | Natural Convection, Forced Exhaust

DG410C/450C/810C/850C

Maximum operating temp. RT+5~70°C

Internal capacity 92L 445L

User-friendly and highly praised labware drying oven.

Features

- Equipped with a large observation window for easy observation.
- Capable of drying multiple instruments for storage or use immediately after drying. The interior and exterior are designed with a high thermal insulation double structure.
- The internal heater is a stainless steel heating tube, With a water basin at the bottom, making it safe for instruments with high water droplet levels.
- Interior is made of stainless steel for easy cleaning.
- Models DG450C and DG850C have more multiple functions compared with DG410C and DG810C. An intake filter is installed at the air intake, and a forced exhaust fan is installed on the exhaust side. Additionally, standard sterilization lamps are included for rapid drying and clean drying functions.

Safety

- Equipped with self-diagnostic circuits (temperature sensor anomaly), power failure compensation function, deviation correction function, leakage protection switch against overcurrent, independent overheating preventer, and other safety features.



Specifications

Model		DG410C	DG450C	DG810C	DG850C
System		Natural convection	Natural Convection / Forced Exhaust	Natural Convection	Natural Convection / Forced Exhaust
Performance · Composition	Operating temp. range	Room temp. +5~70°C			
	GB standard	Temp. fluctuation	±0.5°C (at 70°C)		
		Temp. uniformity	±5.0°C (at 70°C)		
	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Heater	Stainless steel heating pipe			
		1kW		1.34kW	
	Viewing window (width×height mm)	250×300 (tempered glass)		250×700 (tempered glass)	
	Exhaust vent	Internal diameter: 30mm × 2	Moisture-resistant axial flow fan	Internal diameter: 33mm × 2	Moisture-resistant axial flow fan
	Air intake	Internal diameter: 34mm × 2	Equipped with air intake filter	Internal diameter: 34mm × 2	Equipped with air intake filter
Sterilization lamp	None	1 × 8W sterilization lamp	None	1 × 15W sterilization lamp	
Controllers	Temp. control method	PID control			
	Temp. setting method	Digital setting via function menu key and ▲▼ keys			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display			
		Setting temp. display: Red 4-digit LED digital display			
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, program operation			
	Additional functions	Deviation correction, key lock, power failure compensation			
	Heater circuit control	SSR drive			
Sensors	Temperature controller: K-type thermocouple, overheating protection: Liquid expansion temperature controller				
Safety device		Self-diagnostic function (temperature sensor abnormality, SSR short circuit, automatic overheating preventer), key lock, independent overheating preventer, leakage protection circuit breaker against overcurrent			
Specifications	Internal dimensions (W×D×H mm)	450×450×450		620×600×1195	
	External dimensions (W×D×H mm)	504×562×788	504×562×820	674×711×1586	674×711×1618
	Internal capacity	92L		445L	
	Shelf load	15kg/layer			
	Shelf layers/shelf support spacing	10 layers/30mm		29 layers/30mm	
	Power supply (50/60Hz) rated current	AC220V 5A		AC220V 6.5A	
	Weight	Approx. 45kg	Approx. 48kg	Approx. 78kg	Approx. 83kg
Accessories	Shelf	Stainless punching mesh plate			
		2 pcs		4 pcs	
	Supports	4 pcs		8 pcs	
Water collection tray	1 pcs				
Options	Stand	ON61C		-	
	Others	Shelf plate (1 shelf plate with 2 shelf supports)			

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12 Options

Clean Ovens | Dust-Free Environment Heating, Economical

DEC812C/912C

Forced Convection
Automatic Overheating Preventer
Overheating Preventer
Self-diagnostic Function
Key Lock Function
Power Failure Compensation Function
Overcurrent Leakage Circuit Breaker

Operating temp. range RT+10~150°C
 Cleanliness Class 100
 Internal capacity 236L 535L

Economical clean constant temperature oven with a maximum temperature of 150°C and cleanliness level 100.



■ Features

Suitable for drying or thermal treatment of semiconductors, LCDs, electronic products, precision instruments, etc., in a dust-free environment.

- Using a high-temperature resistant HEPA filter, achieving high-performance temperature control through horizontal circulation, maintaining cleanliness level 100 during constant temperature.
- A sensor is installed on the inner side of the HEPA filter to control the temperature in proximity to the item.
- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.

■ Specifications

Model		DEC812C	DEC912C	
System		Forced convection		
Performance	Operating temp. range	Room temp. +10~150°C		
	GB standard	Temp. fluctuation	±0.5°C (at 150°C)	
		Temp. uniformity	±3.0% (at 150°C)	
	JTM standard	Temp. adjusting accuracy	±0.5°C (at 150°C)	
		Temp. distribution accuracy	±3.0°C (at 150°C)	
	Max. temp. reaching time	Approx. 50min		
Cleanliness	Cleanliness maintained at level 100 during constant temperature			
Composition	Interior material	Stainless steel plate		
	Exterior material	Cold rolled steel plate with chemical proofing coating		
	Insulating material	Centrifugal glass wool		
	Heater	Stainless steel heating pipe		
		2.4kW	3.2kW	
	Fan blade/motor	Centrifugal fan, 30W x 2	Centrifugal fan, 30W x 4	
	Cable port	Internal diameter: 16mm, located on the right		
	Exhaust vent	Inner diameter: 38mm (manual), located on the top		
HEPA filter	Dust collection efficiency: 99.97% for 0.3µm particles			
Controllers	Temp. control method	3-stage PID		
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys		
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display		
		Setting temp. display: Red 4-digit LED digital display		
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)		
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation		
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)		
	Additional functions	Deviation correction, key lock, power failure compensation		
Sensors	K thermocouple (temp. controller and overheating protector)			
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions		
Specifications	Internal dimensions (W×D×H mm)	500×450×1050	1070×500×1000	
	External dimensions (W×D×H mm)	710×720×1600	1170×720×1600	
	Internal capacity	236L	535L	
	Shelf load	30kg/layer		
	Shelf layers/shelf support spacing	29 layers/30mm	2×29 layers/30mm	
	Power supply (50/60Hz) rated current	AC220V 12A	AC220V 16A	
	Weight	Approx. 110kg	Approx. 190kg	
Accessories	Shelf	Stainless punching mesh plate 4 pcs	8 pcs	
	Supports	8 pcs	16 pcs	
Options		Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller		

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Clean Ovens | Dust-free, Standard

DE430C/430UC/630C/630UC, DT430C/430UC/630C/630UC

Operating temp. range	DE: RT+30~260°C	DT: RT+30~360°C	Cleanliness	Class 100	Internal capacity	91L	216L
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Precision clean constant temperature oven with cleanliness level 100.



Features

This product suppresses particle generation and is suitable for constant temperature control in environments that require cleanliness, such as semiconductors, LCDs, electronic products, and precision instruments.

- Featuring a high-temperature resistant HEPA filter, achieving high-performance temperature control through horizontal circulation. The C-type maintains cleanliness level 100 during constant temperature while the UC-type maintains cleanliness level 100 throughout heating, constant temperature, and cooling.
- A sensor is installed on the inner side of the HEPA filter to control the temperature in proximity to the item.
- Designed for easy placement and retrieval of items. Prevent dust from entering the chamber during door opening and closing.
- Flow setting and introduction through N₂ flow meter.
- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.

Specifications

Model		DE430C/430UC	DE630C/630UC	DT430C/430UC	DT630C/630UC	
System		Forced convection				
Performance	Operating temp. range	Room temp. +30~260°C		Room temp. +30~360°C		
	GB standard	Temp. fluctuation	±0.3°C (at 260°C)		±0.3°C (at 360°C)	
		Temp. uniformity	±1.5% (at 260°C)		±1.5% (at 360°C)	
	JTM standard	Temp. adjusting accuracy	±0.3°C (at 260°C)		±0.3°C (at 360°C)	
		Temp. distribution accuracy	±2.5°C (at 260°C)		±4°C (at 360°C)	
Max. temp. reaching time	Approx. 70 min	Approx. 70 min	Approx. 80 min			
Cleanliness		C: cleanliness level 100 during constant temperature UC: cleanliness level 100 throughout heating, constant temperature, and cooling				
Composition	Interior material	Stainless steel plate				
	Exterior material	Cold rolled steel plate with chemical proofing coating				
	Insulating material	Aluminosilicate cotton				
	Heater	Stainless steel heating pipe				
		2.5kW	3.6kW	5.2kW		
	Fan blade/motor	Centrifugal fan, high-temperature self-cooling motor 370W				
	Differential pressure gauges	Analog type 0~500Pa				
	Cable port	Internal diameter: 33mm×1, located on the right				
	Additional mechanism	Exhaust vent (manual) outer diameter: 60mm				
	HEPA filter	Dust collection efficiency: ≥99.95% for particles of 0.3 μm (DE430C/430UC, DE630C/630UC, DE430UC/DE630UC); ≥99.995% for particles of 0.1~0.2 μm (DT430UC/DT630UC)				
N ₂ inlet interface	Outer diameter: 8mm tapered joint					
Controllers	Temp. control method	3-stage PID				
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys				
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display				
		Setting temp. display: Red 4-digit LED digital display				
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)				
	Operation functions	Fixed temp. operation, auto start, auto stop, program operation				
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)				
Additional functions	Deviation correction, key lock, power failure compensation					
Sensors	K thermocouple (temp. controller and overheating protector)					
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions				
Specifications	Internal dimensions (W×D×H mm)	450×450×450	600×600×600	450×450×450	600×600×600	
	External dimensions (W×D×H mm)	700×995×1738	850×1145×1738	700×995×1738	850×1145×1738	
	Internal capacity	91L	216L	91L	216L	
	Shelf load	30kg/layer				
	Shelf layers/shelf support spacing	12 layers/30mm	17 layers/30mm	12 layers/30mm	17 layers/30mm	
Power supply (50/60Hz) rated current	3-phase AC380V 4.5A		3-phase AC380V 6.5A		3-phase AC380V 9A	
Weight	Approx. 220kg	Approx. 270kg	Approx. 220kg	Approx. 270kg		
Accessories	Shelf	Stainless steel wire mesh plate				
	Supports	2 pcs	3 pcs	2 pcs	3 pcs	
Options	Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller	4 pcs	6 pcs	4 pcs	6 pcs	

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6 Plasma Equipment

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8 Baths

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10 Rotary Evaporators

11 Stirrers & Shakers

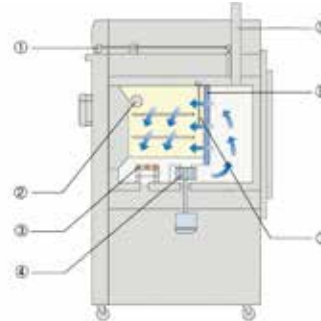
12 Options

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker
- CE Certification

Internal chamber



Structural diagram

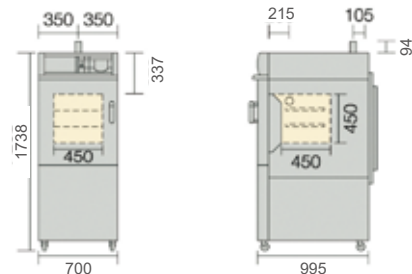


- ① Manual or automatic (optional) exhaust vent
- ② Cable port ③ Heater ④ Centrifugal fan ⑤ Exhaust vent
- ⑥ Aging judgment via HEPA filter differential pressure meter
- ⑦ Sensor (temperature control at a position close to the sample)

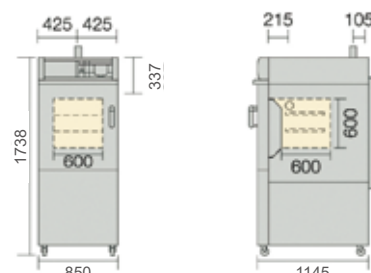
Control panel



Dimension diagram (mm)



[DE430C, DT430C, DE430UC, DT430UC]



[DE630C, DT630C, DE630UC, DT630UC]

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Clean Ovens | Dust-free Environment Heating, Large Capacity

DES830C/830UC, DTS830C/830UC

Operating temp. range	DES: RT+50~260°C	DTS: RT+50~360°C	Cleanliness	Class 100	Internal capacity	300L
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Space-saving, large capacity clean constant temperature chamber.



■ Features

With space-saving and large capacity design, it can suppress dust generation during temperature rise and fall. The controller allows for multifunctional, dialog-type input with simple operation, equipped with an easy-to-confirm graphical monitor.

- With large capacity of 300L for handling bulk workpieces, significantly reducing the footprint while effectively utilizing research, development, and production line space.
- Using high-temperature resistant HEPA filters, reaching up to 360°C; type C maintains cleanliness level 100 during constant temperature while type UC maintains cleanliness level 100 throughout heating, constant temperature, and cooling.

■ Specifications

Model		DES830C/830UC	DTS830C/830UC	
System		Front horizontal air supply circulation		
Operating temp. range		Room temp. +50~260°C	Room temp. +50~360°C	
Cleanliness		C: cleanliness level 100 during constant temperature UC: cleanliness level 100 throughout heating, constant temperature, and cooling		
Performance	GB standard	Temp. fluctuation	±0.5°C	
		Temp. uniformity	±1.5% (at 260°C)	
	JTM standard	Temp. adjusting accuracy	±0.5°C	
		Temp. distribution accuracy	±2.0°C (at 260°C)	
Max. temp. reaching time		Approx. 70 min	Approx. 90 min	
Composition	Interior material		Stainless steel plate	
	Exterior material		Cold rolled steel plate with chemical proofing coating	
	Insulating material		Aluminosilicate cotton	
	Heater		Stainless steel heating tube with fins	
			6kW	9kW
	Fan blade/motor		Centrifugal fan, high-temperature self-cooling motor 250W x 2	
	Differential pressure gauges		Analog type 0~500Pa	
	Cable port		Internal diameter: 33mm×1, located on the right	
	Additional mechanism		Exhaust vent (manual) inner diameter: 50mm	
	HEPA filter		Dust collection efficiency: 99.97% for 0.3µm particles	
N ₂ inlet interface		Outer diameter: Φ10 quick-connect		
Controllers	Temp. control method		3-stage PID	
	Temp. setting method		Digital setting through special function menu keys and ▲/▼ keys	
	Temp. display method		Measured temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display	
	Timer		1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)	
	Operation functions		Fixed temp. operation, automatic start operation, automatic stop operation, program operation (up to 16 segments, can repeat, be separated, etc.)	
	Additional functions		Timing function (actual time timing within 24 hours), accumulated timing function (can accumulate up to 49,999 hours), external communication function (RS422A)	
Sensors		K thermocouple (temp. controller and overheating protector)		
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions		
Specifications	Internal dimensions		610×480×1100	
	External dimensions (W×D×H mm)		830×1090×1955 (DTS830C/DES830C), 1020×1490×1955 (DTS830UC/DES830UC)	
	Internal capacity		300L	
	Shelf load		30kg/layer	
	Shelf layers/shelf support spacing		35 layers/30mm	
	Power supply (50/60Hz) rated current		3 phase AC380V 10A	3 phase AC380V 15A
Weight		Approx. 350kg		
Accessories	Shelf		Stainless steel wire mesh plate	
			3 pcs	
	Supports		6 pcs	
Options		Shelf plate (1 shelf plate with 2 shelf supports), automatic vent, N ₂ introduction device, micro printer, data logger, combined warning light (standby/operation/fault), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller		

1 Sterilizers

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3 Furnaces

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8 Baths

9 Water Circulators

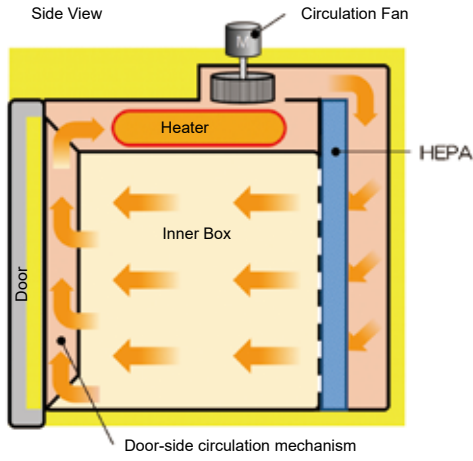
10 Rotary Evaporators

11 Stirrers & Shakers

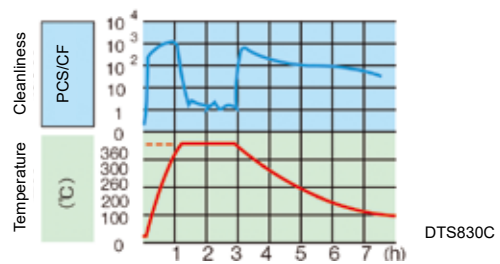
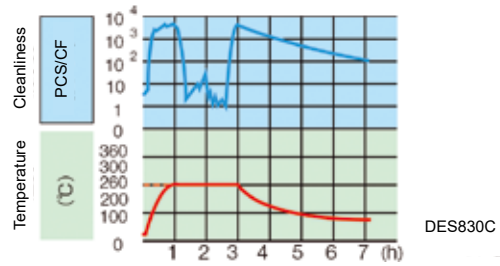
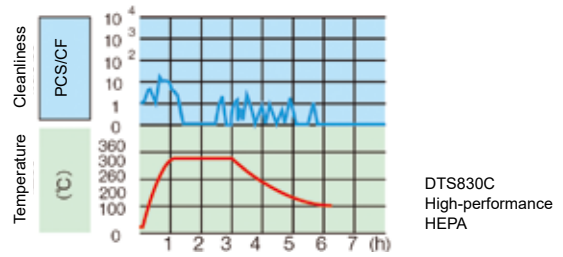
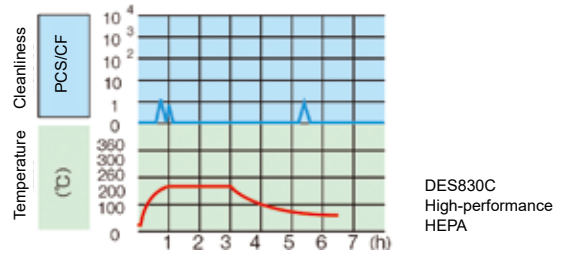
12 Options

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Structural diagram



Cleanliness data during temperature rise and fall



Control panel



Shelf



Sterilizers	1
Granulation and Spray Dryers	2
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Incubators	5
Plasma Equipment	6
Water Purifiers	7
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Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Clean Inert Ovens | Class 100, Oxygen Concentration: 20ppm

DTN430C/630C/450C/650C

Forced
ConvectionAutomatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionOvercurrent
Leakage Circuit
Breaker

Maximum operating temp.	DTN430C/630C: 360°C	DTN450C/650C: 500°C	Cleanliness	Class 100	Oxygen concentration	20ppm	Internal capacity	91L	261L
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Atmosphere furnace with cleanliness level 100 and oxygen concentration below 20ppm, mainly used for curing semiconductor wafers.

Features

- Maximum operating temperatures of 360°C and 500°C, with cleanliness level 100 and oxygen concentration below 20ppm, primarily used for curing semiconductor wafers (photoresist PI, PBO curing), glass substrate baking, high-precision annealing, etc.
- Using a high-temperature-resistant high-performance filter, maintaining cleanliness level 100 inside the chamber, allowing for high-temperature baking in a clean environment.
- High gas-tightness pressure chamber construction, with short oxygen concentration reaching time and extremely low N₂ consumption. Maintaining high gas-tightness through magnetic sealing and a water-cooling mechanism to protect sealing components from thermal effects.
- Quick heating and cooling, with adjustable heating and cooling rates. Equipped as standard with a system that condenses and recovers exhaust-gas condensate.

Safety

- Equipped with door detection switch, overheating preventer, oxygen concentration abnormality, nitrogen pressure detection, chamber pressure testing, nitrogen flow detection, cooling water flow detection, leakage sensor, overcurrent leakage protection and other devices.



Specifications

Model		DTN430C	DTN630C	DTN450C	DTN650C	
System		Nitrogen replacement + Forced convection				
Performance	Operating temp. range	Room temp. +50~360°C		Room temp. +50~500°C		
	GB standard	Temp. fluctuation	±0.3°C (at 360°C)		±0.5°C (at 500°C)	
		Average temp. deviation	±1.5°C (at 100°C), ±2°C (at 200°C), ±4°C (at 300°C), ±5°C (at 360°C)		±1.5°C (at 100°C), ±2°C (at 200°C), ±4°C (at 300°C), ±5°C (at 400°C), ±8°C (at 500°C)	
	JTM standard	Temp. adjusting accuracy	±0.3°C (at 360°C)		±0.5°C (at 500°C)	
		Temp. distribution accuracy	±5°C (at 360°C)		±8°C (at 500°C)	
	Max. temp. reaching time	Approx. 80 min		Approx. 120 min		
	Oxygen concentration	Below 20ppm				
	Oxygen concentration reaching time	≤20 min (250L/min nitrogen)	≤25 min (250L/min nitrogen)	≤20 min (250L/min nitrogen)	≤25 min (250L/min nitrogen)	
Cleanliness	Constant temperature maintained at level 100					
Composition	Interior material	Stainless steel plate				
	Exterior material	Cold rolled steel plate with chemical proofing coating				
	Insulating material	Aluminosilicate cotton				
	Heating method	Stainless steel heating pipe		Alloy heating wire		
	Heating power	Main heater	6.0kW	9kW	10.8kW	14.2kW
		N ₂ preheating	1kW			
Cooling mechanism	Stainless steel cooling water heat exchanger					
HEPA filter	Dust collection efficiency: 99.97% for 0.3µm particles					
Controllers	Temp. control method	PID control				
	Temp. controller	Liquid crystal touchscreen + PLC				
	Operation functions	Manual operation, automatic operation				
	Program mode	10 program operations, each program can set 10 segments				
	Additional functions	Operator level certification				
	Heater circuit control	SSR drive				
Sensors	K-type thermocouple (temperature control and overheating prevention)					
Safety device	Door detection switch, overheating preventer, oxygen concentration anomaly, overheating of N ₂ preheating, low water pressure detection, low N ₂ pressure detection, cooling water flow detection, N ₂ flow detection, fan overload detection, overcurrent leakage protection, etc.					
Specifications	Internal dimensions	450×450×450	660×600×660	450×450×450	660×600×660	
	External dimensions (W×D×H mm)	1090×1170×1570	1300×1320×1780	1090×1170×1570	1300×1320×1780	
	Internal capacity	91L	261L	91L	261L	
	Shelf layer/spacing	12 layers/30mm	19 layers/30mm	12 layers/30mm	19 layers/30mm	
	Exhaust vent	KF40				
	Nitrogen inlet	Rc1/2				
	Cooling water inlet	Rc3/4				
	Hot water outlet	Rc3/4, 2 pcs				
	Power supply (50/60Hz) rated current	3 phase AC380V 16A	3 phase AC380V 25A	3 phase AC380V 24A	3 phase AC380V 28A	
	Weight	Approx. 900kg	Approx. 1100kg	Approx. 900kg	Approx. 1100kg	
Options	Shelf plate, vacuum pump, temperature data logger, multicolor light tower, ethernet communication function, UPS backup power supply, scanner, PC components, temperature measurement components, etc.					

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Far Infrared Ray Ovens | Far Infrared Heating

DIR631C

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Operating temp. range RT+10~360°C

Temp. distribution accuracy ±3.0°C (at 360°C)

It uses the properties of far infrared ray heaters (IR heaters) for thermal treatment of polymer materials and other applications.



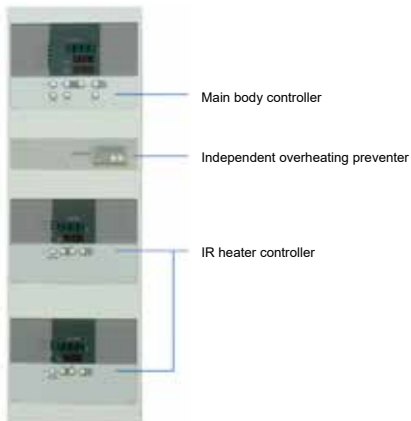
■ Features

- High temperature natural convection ovens with maximum operating temperature 360°C.
- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. 6 modes with a total of 90 segments program controller.
- Overheating protection, deviation correction and key locking through submenu keys.
- Quick exhaust and cooling through exhaust dampers.

■ Safety

- Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), independent overheating preventer, overcurrent leakage protection, key lock and other safety functions.

Control panel



■ Specifications

Model		DIR631C	
System		IR radiation + Forced convection and ventilation	
Performance	Operating temp. range	Room temp. +10~360°C	
	GB standard	Temp. fluctuation	±0.2°C (at 360°C, IR heater off)
		Temp. deviation	±5°C (at 360°C, IR heater off)
	JTM standard	Temp. adjusting accuracy	±0.2°C (at 360°C, IR heater off)
		Temp. distribution accuracy	±3°C (at 360°C, IR heater off)
Max. temp. reaching time		100 min (from room temperature to 360°C, IR heater off)	
Composition	Main body heater	Fin-type stainless steel heating tube 3.75kW	
	IR heater	0.25kW×16 pcs×upper and lower surfaces	
	Motor · fan	Capacitor-type motor 20W + axial flow fan	
	Sensors	K-type thermocouple double probe×1 (for main body temperature controller and overheating preventer)	
		K-type thermocouple×2 (for IR heater, centrally embedded in IR heater)	
	Cable port	I.D. 30 mm, located at the back	
Other additional functions		Exhaust vent (manual type)	
Controllers	Control method	PID control (main body)	
	Operating functions	Fixed temp. operation, program operation, quick automatic stop, automatic stop, automatic start	
	Additional functions	Deviation correction function, key lock function, power failure compensation function, door switch detection	
Safety device	Leakage circuit breaker	Leakage, short circuit, and overcurrent protection	
	Overheating preventer	Automatically cut off the heater circuit when overheating occurs	
	Self-diagnostic function	Temperature sensor abnormality, heater disconnection, SSR short circuit, automatic overheating prevention function	
Specifications	Internal dimensions (W×D×H mm)	600×600×600	
	Effective dimensions (W×D×H mm)	600×600×200	
	External dimensions (W×D×H mm)	1200×780×1000	
	Internal capacity	216L	
	IR heater upper and lower spacing	200mm	
	Weight	Approx. 230kg	
	Power supply (50Hz)	380V 18A	
Accessories	Shelf	Stainless steel wire mesh plate	
	Supports	2 pcs	
	Stand	OP62C	
Options	Others	Shelves (1 shelf with 2 shelf supports), micro printer, data logger, combined warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software	

Internal chamber



- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

High Temp. Ovens | High Temp., 700°C

DR210C

Natural Convection

Automatic Overheating Preventer

Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker

Operating temp. range 300~700°C

Temp. distribution accuracy ±25°C (at 700°C)

Internal capacity 13.8L

High-temperature drying oven that combines electric furnace, constant temperature chamber, and drying chamber.

Features

- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. 6 modes with a total of 90 segments program controller.
- Overheating protection, deviation correction and key locking through submenu keys.

Safety

- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit protection), overheating preventer, overcurrent leakage protection, key lock and other safety functions.



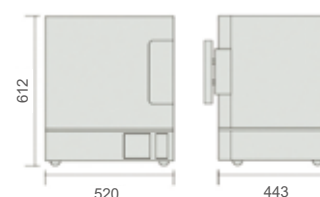
Specifications

Model		DR210C	
System		Natural convection	
Performance	Operating temp. range	300~700°C	
	GB standard	Temp. fluctuation	±2°C (at 700°C)
		Temp. uniformity	±5% (at 700°C)
	JTM standard	Temp. adjusting accuracy	±5°C (at 700°C)
Temp. distribution accuracy		±25°C (at 700°C)	
Max. temp. reaching time		Approx. 70 min (room temperature~700°C)	
Composition	Interior material	Stainless steel plate	
	Exterior material	Cold rolled steel plate with chemical proofing coating	
	Insulating material	Aluminosilicate cotton	
	Heater	Iron-chromium alloy heating wire 1.3kW	
Controllers	Temp. control method	The heater output is controlled using a microcomputer PID controller	
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys	
	Temp. display method	Achieved temp. display:	Green 4-digit LED digital display
		Setting temp. display:	Red 4-digit LED digital display
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)	
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation	
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)	
Additional functions	Deviation correction, key lock, power failure compensation		
Sensors		K thermocouple (temp. controller and overheating protector)	
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions	
Specifications	Internal dimensions (W×D×H mm)	250×250×220	
	External dimensions (W×D×H mm)	520×443×612	
	Internal capacity	13.8L	
	Shelf load	15kg/layer	
	Shelf layers	3 layers	
	Support spacing	33mm	
	Power supply (50/60Hz) rated current	AC220V 6A	
	Weight	Approx. 36kg	
Accessories	Shelf	Stainless punching mesh plate 2 pcs	
	Supports	Integrated structure with the inner box (33mm spacing)	
Options	Stand	ON61C	
	Others	Shelves, micro printer, data logger, combined warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software	

Control panel



Dimension diagram (mm)



1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Sterilizers	1
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Stirrers & Shakers	11
Options	12

Vacuum Ovens | Multi-function, Touch Panel

DPT40C/60C/80C/100C

- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Operating temp. range	40~200°C	Operating vacuum range	Atmospheric pressure ~0.1kPa	Internal capacity	91L	216L	512L	1000L
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Touch screen and vacuum degree control, various operating modes, easy operation.



Features

- 7-inch touch screen for easy operation with fixed temp. operation, program operation, and timer operation. Standard 3-level authorization login.
- Multiple pressure operation mode options combined with constant temperature and program operations, allowing for various programs to be designed.
- Gas exchange can be conducted, effectively preventing oxidation and eliminating impurities in the chamber by replacing the chamber air with N₂ gas.
- The box has space for installing a vacuum pump, maximizing effectiveness in limited spaces.
- Quick-connect flange piping method simplifies connections.
- In emergency situations, manual air intake is available.

Safety

- Equipped with self-diagnostic circuit (temperature sensor abnormality, heater disconnection, automatic overheating prevention, SSR short circuit), independent overheating alarm, three-level authority function, and leakage protection switches to prevent overcurrent.

Specifications

Model	DPT40C	DPT60C	DPT80C	DPT100C	
System	Pressure reduction, wall heating				
Performance	Operating temp. range	40~200°C			
	Operating pressure range	Atmospheric pressure ~0.1kPa			
	Temp. fluctuation (GB standard)	±1°C (at 200°C, normal pressure)			
	Temp. adjustment accuracy (JTM standard)	±1°C (at 200°C)			
Composition	Temperature rise time	(RT. ~ 210°C) ≤80min			
	Interior material	Stainless steel plate			
	Exterior material	Cold-rolled steel plate with surface chemical proofing coating			
	Insulating material	Aluminosilicate cotton			
	Heater material	Mica heating plate			
	Heating method	Heating on the external wall			
	Heating power	2.25kW	4.48kW	6.5kW	14.4kW
	Viewing window	Tempered glass + safety protection resin panel			
Controllers	Vacuum pump installation space	Yes			
	Temp. control method	PID control			
	Pressure control method	Deviation control			
	Temp. /pressure setting/display method	7-inch color LCD touchscreen for display and settings			
	Timer	1 min~99 h 59 min			
	Operation functions	Fixed temp. operation, program operation, timing operation			
	Program mode	The program operates in 19 modes and 15 segments			
	Additional functions	Temperature curve, temperature history curve, alarm records, alarm history records, operation log, data export function, Chinese/ Japanese/ English three-language switching, calibration function, screen brightness adjustment, three-level authority function			
Sensors	K-type thermocouple				
Safety device	Self-diagnostic circuit (temperature sensor abnormality, heater disconnection, automatic overheating, SSR short circuit), independent overheating alarm, leakage protection switches, three-level authority function, safety valve				
Specifications	Internal dimensions (W×D×H mm)	450×450×450	600×600×600	800×800×800	1000×1000×1000
	External dimensions (diameter×height mm)	670×670×1525	820×820×1675	1020×1019×1875	1300×1230×2110
	Internal capacity	91L	216L	512L	1000L
	Shelf layers/shelf support spacing	4 layers/105mm	4 layers/140mm	4 layers/190mm	8 layers/120mm
	Shelf load	15kg/layer			
	Exhaust vent	25KF flange		40KF flange	
	Air intake	Rc3/8		Rc1/2	
	Power supply (50/60Hz) rated current	AC220V 10.5A	AC220V 25A	AC380V 18.5A	AC380V 22A
Weight	Approx. 190kg	Approx. 290kg	Approx. 450kg	Approx. 1000kg	
Accessories	Stainless steel punched mesh plate, 2 pieces			Stainless steel punched mesh plate, 4 pieces	
Options	Shelves, vacuum pump, vacuum pump oil, vacuum pump pre-filter, vacuum pump oil-mist filter, vacuum pump exhaust vent, cold trap, N ₂ pressure reduction valve, N ₂ flow meter, air intake filter, air intake silencer, data logger, combined warning light (standby/running/fault), temperature output terminal (4~20mA), pressure output terminal (4~20mA), external alarm output terminal, pirani vacuum gauge				

Vacuum Ovens | Vacuum Standard

DP23C/33C/43C/63C/83C/103C

Automatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
Function

Operating temp. range	DP23C/33C: 40~240°C	DP43C/63C/83C/103C: 40~200°C	Operating vacuum range	101~0.1KPa
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Vacuum drying ovens designed for various applications of vacuum drying.



■ Features

- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Digital setting through special function menu keys and ▲/▼ keys. 6 modes with a total of 90 segments program controller.
- Overheating protection, deviation correction and key locking through submenu keys.

■ Safety

- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection, key lock and other safety functions.
- For safety, a protective panel made of resin is installed on the viewing window.

■ Specifications

Model	DP23C	DP33C	DP43C	DP63C	DP83C	DP103C	
System	Pressure reduction · wall heating						
Performance	Operating temp. range	40~240°C		40~200°C			
	Operating pressure range	101~0.1KPa (760~1Torr)					
	Max. temp. reaching time	Approx. 60 min	Approx. 90 min	Approx. 80 min	Approx. 120 min		
	Temp. fluctuation (GB standard)	±0.5°C (at 240°C)		±0.5°C (at 200°C)			
	Temp. adjusting accuracy (JTM standard)	±1.5°C (at 240°C)		±1.0°C (at 200°C)			
Composition	Interior material	Stainless steel plate					
	Exterior material	Cold rolled steel plate with chemical proofing coating					
	Insulating material	Aluminosilicate cotton					
	Heater material	Mica heating plate					
	Heating method	Heating on the external wall					
	Heating power	0.68kW	1.05kW	2.25kW	3.15kW	3.96kW	14.4kW
	Viewing window	Tempered glass + safety protection resin panel					
Controllers	Vacuum gauge	Pointer type, -0.1~0MPa					
	Vacuum pump installation space (W×D×H mm)	-	-	320×600×540	470×750×540	635×930×540	915×1120×570
	Controller	VS6 type programmable controller					
	Temp. control method	3-stage PID					
	Temp. setting method	Digital setting through special function menu keys and ▲/▼ keys					
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display					
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)					
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation					
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)					
	Additional functions	Deviation correction, key lock, power failure compensation					
Heater circuit control	SSR drive						
Sensors	K thermocouple (temp. controller and overheating protection)						
Safety device	Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions						
Specifications	Internal dimensions (W×D×H mm)	200×250×200	300×300×300	450×450×450	600×600×600	800×800×800	1000×1000×1000
	External dimensions (W×D×H mm)	400×410×682	510×460×782	670×690×1523	820×820×1673	1020×1020×1875	1300×1227×2110
	Internal capacity	10L	27L	91L	216L	512L	1000L
	Shelf layer/spacing	3 layers (fixed)/63mm	4 layers (fixed)/71mm	4 layers (fixed)/105mm	4 layers (fixed)/140mm	4 layers (fixed)/190mm	8 layers (fixed)/120mm
	Exhaust vent	External diameter 18mm		KF25 flange		KF40 flange	
	Air intake	External diameter 18mm		Rc3/8		Rc3/8	Rc1/2
	Power supply (50/60Hz) rated current	AC220V 3.5A	AC220V 5A	AC220V 10.5A	AC220V 14.5A	AC220V 18.5A	AC380V 22A
	Weight	Approx. 43kg	Approx. 69kg	Approx. 190kg	Approx. 290kg	Approx. 450kg	Approx. 1000kg
Accessories	Stainless steel punched mesh plate, 2 pieces						
Options	Stand	ONS10C		-			
	Others	Shelves, vacuum pump, N ₂ introduction device, data logger, combined warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software					

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Vacuum Ovens | Economical, Benchtop

ADP200C/210C/300C/310C

Automatic Overheating Preventer

Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker

Operating temp. range 40~240°C

Operating vacuum range -0.1~0MPa

Internal capacity 10L 27L

Vacuum drying oven with enhanced and cost-effectiveness features.

Features

- The door sealing strip is made of silicone in one piece, ensuring sealing performance. Easy operation allows for fixed temp. operation, program operation, rapid auto stop, auto stop, and auto start.
- Digital settings can be achieved through a dedicated operation function menu key and ▼▲ keys. Able to set overheating protection, deviation correction, and key lock.

Safety

- Equipped with self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection, key lock safety and other safety functions.
- For safety, a protective panel made of resin is installed on the viewing window.



Specifications

Model		ADP200C	ADP210C	ADP300C	ADP310C
System		Pressure reduction · wall heating			
Performance	Operating temp. range	40~240°C			
	Operating pressure range	101~0.1KPa (760~1Torr)			
	Max. temp. reaching time	Approx. 70 min		Approx. 100 min	
	Temp. fluctuation (GB standard)	±0.5°C (at 200°C)			
	Temp. adjusting accuracy (JTM standard)	±1.5°C (at 240°C)			
Composition	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Insulating material	Aluminosilicate cotton			
	Heating method	Heating on the external wall			
	Heating power	0.68kW		1.05kW	
	Viewing window	Tempered glass + safety protection resin panel			
	Vacuum gauge	Pointer type, -0.1~0MPa			
Controllers	Temp. control method	PID control			
	Temp. setting method	Digital setting via function menu key and ▲ ▼ keys			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display			
		Setting temp. display: Red 4-digit LED digital display			
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation			
	Additional functions	Deviation correction, key lock, power failure compensation			
	Heater circuit control	SSR drive			
Sensors	K-type thermocouple (temperature regulator and overheat protector)				
Safety device		Self-diagnostic circuit (temperature sensor anomaly, heater disconnection protection, automatic overheating preventer, SSR short-circuit), overheating preventer, overcurrent leakage protection, key lock functions			
Specifications	Internal dimensions	200×250×200		300×300×300	
	External dimensions (W×D×H mm)	400×412×603		500×465×705	
	Internal capacity	10L		27L	
	Shelf layers	2 layers (fixed)		3 layers (fixed)	
	Shelf spacing	65mm		75mm	
	Exhaust vent	External diameter 18mm			
	Air intake	External diameter 18mm			
	Power supply (50/60Hz) rated current	AC115V 6A	AC220V 3.5A	AC115V 9.5A	AC220V 5A
	Weight	Approx. 30kg		Approx. 55kg	
	Accessories	Aluminum stamped mesh plate, 2 pieces		Aluminum stamped mesh plate, 3 pieces	
Options	Stand (ONS10C), shelves, vacuum pump, micro printer, data logger, centralized monitoring software				

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Vacuum Ovens | Vertical, High Precision

DPF43C/63C

Automatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
Function

Specifications

Model		DPF43C	DPF63C
System		Pressure reduction · internal wall heating	
Operating temp. range		40~200°C	
Operating pressure range		101~0.1KPa (760~1Torr)	
Max. temp. reaching time		Approx. 45 min	Approx. 60 min
GB standard	Temp. fluctuation	±0.5°C (at 200°C)	
	Temp. uniformity	±2.5% (at 200°C)	
JTM standard	Temp. adjusting accuracy	±1.0°C (at 200°C)	
	Temp. distribution accuracy	±5°C (at 200°C)	
Heating method		Heating on the internal wall	
Heating power		4.2kW	5.4kW
Vacuum gauge		Pointer type, -100~0KPa	
Internal dimensions (W×D×H mm)		380×390×380	530×540×530
Effective volume		56L	151L
External dimensions (W×D×H mm)		670×670×1524	820×820×1675
Internal capacity		91L	216L
Exhaust vent		KF25 flange	
Air intake		Rc3/8	
Power supply (50/60Hz) rated current		AC220V 20A	AC220V 25A
Weight		Approx. 290kg	Approx. 450kg

Vacuum Ovens | Vertical, 300°C

DPH43C/63C

Automatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionKey Lock
FunctionPower Failure
Compensation
FunctionOvercurrent
Leakage Circuit
Breaker

Specifications

Model		DPH43C	DPH63C
System		Pressure reduction · external wall heating	
Operating temp. range		40~300°C	
Operating pressure range		101~0.1KPa (760~1Torr)	
Max. temp. reaching time		Approx. 80 min	Approx. 120 min
Temp. fluctuation (GB standard)		±0.5°C (at 300°C)	
Temp. adjusting accuracy (JTM standard)		±1.0°C (at 300°C)	
Heating method		Heating on the external wall	
Heating power		3.2kW	4kW
Vacuum gauge		Pointer type, -100~0 KPa	
Internal dimensions (W×D×H mm)		450×450×450	600×600×600
External dimensions (W×D×H mm)		670×670×1523	820×820×1673
Internal capacity		91L	216L
Exhaust vent		KF25 flange	
Air intake		Rc3/8	
Power supply (50/60Hz) rated current		AC220V 15A	AC220V 18.5A
Weight		Approx. 190kg	Approx. 290kg

1 Sterilizers

2 Granulation
and Spray
Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma
Equipment7 Water
Purifiers

8 Baths

9 Water
Circulators10 Rotary
Evaporators11 Stirrers &
Shakers

12 Options

Vacuum Ovens | Vertical, 400°C

DPHH43C/63C

Automatic Overheating Preventer

Overheating Preventer

Self-diagnostic Function

Key Lock Function

Power Failure Compensation Function

Overcurrent Leakage Circuit Breaker



Specifications

Model	DPHH43C	DPHH63C
System	Pressure reduction · internal wall heating	
Operating temp. range	40~400°C	
Operating pressure range	101~0.1kPa (760~1Torr)	
Max. temp. reaching time	Approx. 75 min	Approx. 90 min
Temp. fluctuation (GB standard)	±0.5°C (at 400°C)	
Temp. adjusting accuracy (JTM standard)	±1.0°C (at 400°C)	
Heating method	Heating on the internal wall	
Heating power	4kW	5.2kW
Vacuum gauge	Pointer type, -100~0kPa	
Internal dimensions (W×D×H mm)	450×450×450	600×600×600
External dimensions (W×D×H mm)	820×820×1675	1020×1020×1875
Internal capacity	91L	216L
Exhaust vent	ICF25 flange	ICF40 flange
Air intake	Rc3/8	Rc1/2
Power supply (50/60Hz) rated current	AC220V 18.5A	AC220V 24A
Weight	Approx. 290kg	Approx. 450kg

- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4**
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

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High-temperature Incubators	106
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5 | Incubators



- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators**
- 6 Plasma Equipment
- 7 Water Purifiers
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

Incubator product series to meet various customer needs

The series of constant temperature incubators perform excellently in terms of high-precision temperature control and cultivation stability. The various product series offer high-precision temperature control and cultivation stability, while meeting a wide range of customer requirements for capacity and operating temperature range.

Function · Safety Device

<p>Forced convection circulation By means of forced circulation of high-performance centrifugal fan blades, stir the chamber inside to obtain uniform temperature distribution accuracy.</p>	<p>Self-diagnosis function By means of the microcomputer carried in controller, detect the abnormality of circuit, if abnormal occurs, control the device within safety range and the alarm sounds.</p>
<p>Natural convection By means of heater or air jacket natural convection in chamber.</p>	<p>Key lock function Prevent the misoperation during operation.</p>
<p>Auto overheat prevention function Built-in overheat prevention function of controller, usually when constant temp. oven or drying oven chamber temp. reaches set temp. + 12°C, and constant temp. bath temp. reaches set temp. + 6°C, the heater cuts off (auto recovery).</p>	<p>Backup function Even in power outage or cut off power source, the set value can be memorized.</p>
<p>Overheat protector Controller and overheat protector are all-in-one. They share the same power source, but other circuits are standalone. If overheat abnormally, cut off (manual recovery) heater circuit.</p>	<p>Power outage compensation When the power recovers, it's able to select to stop or continue operation.</p>
<p>Standalone overheat protector Different circuit from controller, if overheat abnormally, cut off (manual recovery) heater circuit. According to different models, respectively carry digital, liquid-expansion, bimetallic type, etc.</p>	<p>Overcurrent breaker When abnormal current passes, cut off the power to protect the unit.</p>
	<p>Overcurrent electric leakage breaker The breaker has both overcurrent cut-off function and electric leakage cut-off function.</p>
	<p>Emergency stop button To stop in an emergency, press the emergency stop button to cut off power.</p>

Model selection list

Category	Temp. control range	Temp. fluctuation	Temp. uniformity	Series	Models	Features	Capacity (L)						Page No.		
							0-20	20-40	40-100	100-150	150-200	200-400		400-600	
High-temp. incubation	Room temp. +5~80°C	±0.5°C	±1.5°C	IS	IS412C/612C/812C/912C	Programmable Incubators with Air Jacket			97		159	318	567	106	
	Room temp. +5~80°C	±0.5°C	±1.5°C	IC	IC412C/612C/812C/912C	Constant temperature operation, air Jacket type			97		159	318	567	108	
	Room temp. +5~80°C	±0.1°C	±1.0°C	ICF	ICF410C/610C/810C/910C	High temperature uniformity			89		147	294	524	110	
Low-temp. incubation	1-chamber	-10~60°C	±0.5°C	≤2.0°C	IN	IN613C/613CW/813C/913C	Program operation					143	286	624	112
	2-chamber	Upper chamber: Room temp. +5~80°C	±0.5°C	≤3.0°C	INC	INC822C	High-temperature + low-temperature with 2-chamber			143					114
		Lower chamber: -10~60°C	±0.5°C	≤2.0°C						159					
		Upper chamber: -10~60°C	±0.3°C	±1.0°C	IQ	IQ823C	Low-temperature type with 2-chamber			143					115
Lower chamber: -10~60°C	±0.3°C	±1.0°C						143							
CO ₂ incubation	Room temp. +5~60°C	±0.3°C	±0.5°C	IPE	IPE610	Air Jacket type, dry heat sterilization				185				116	

Sterilizers	1
Granulation and Spray Dryers	2
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High-temp. Incubators | Air Jacket

IS412C/612C/812C/912C

Operating temp. range RT+5~80°C

Temp. distribution accuracy ±1.0°C (at 37°C)

Internal capacity 97L 159L 318L 567L

From small capacity to large capacity, high-function, long-term hot sale constant temperature incubators.

Features

- Due to the air jacket heat transfer method, the temperature distribution is uniform.
- Double door structure reduces heat loss, maintaining a stable constant temperature state.
- Inner door is made of reinforced glass, allowing observation of the interior.
- Easy operation, available for fixed temp., program, quick auto stop, auto stop and auto start operations.
- Use special function menu keys and ▲/▼ keys to realize digital setting. A programmable controller with repeat function and 3 modes.
- Use submenu keys to operate overheat protector, deviation correction and key locking.

Safety

- Equipped with self-diagnostic circuit (temperature sensor error detection, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection switch, key lock safety and other safety functions.



Specifications

Model		IS412C	IS612C	IS812C	IS912C
System		Airflow natural convection			
Operating temp. range		Room temp. +5~80°C			
Performance	GB standard	Temp. fluctuation	±0.5°C (at 37°C)		
		Temp. uniformity	±1.5°C (at 37°C)		
	JTM standard	Temp. adjusting accuracy	±0.2°C (at 37°C)		
		Temp. distribution accuracy	±1.0°C (at 37°C)		
Composition	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Insulating material	Glass fiber			
	Heater	Nichrome heating wire			
	Exhaust vent	I.D. 30mm×2 (top)		I.D. 30mm×2 (one at the right and one at the left)	
Controllers	Temp. control method	PID control			
	Temp. setting method	Use special function menu keys and ▲/▼ keys to realize digital setting			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display Setting temp. display: Red 4-digit LED digital display			
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation			
	Program mode	Programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)			
	Additional functions	Deviation correction, key lock, power outage compensation			
	Sensors	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple			
Safety device		Self-diagnostic function (temperature sensor anomaly, SSR short circuit, heater disconnection, automatic overheat prevention), key lock function, overheat prevention device, overcurrent leakage protection switch			
Specifications	Internal dimensions	450×480×450	600×530×500	600×530×1000	1070×530×1000
	External dimensions (W×D×H mm)	560×606×820	710×656×870	710×655×1608	1180×655×1615
	Internal capacity	97L	159L	318L	567L
	Shelf load	Approx. 15kg/shelf			
	Shelf layers	11 layers	13 layers	29 layers	29 layers×2
	Support spacing	30mm			
	Power supply (50/60Hz) rated current	AC220V 1.5A	AC220V 2A	AC220V 3.5A	AC220V 5.5A
Weight	Approx. 45kg	Approx. 65kg	Approx. 102kg	Approx. 166kg	
Accessories	Shelf	Stainless punching mesh plate		2 pcs	4 pcs
	Supports	4 pcs		8 pcs	16 pcs
Options	Stand	ON61C		-	
	Stacking fittings	OD40C	OD60C	-	
	Others	Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller			

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

- Natural Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker



Control panel



Exhaust vent (IS412C/612C)



Internal chamber (IS612C)

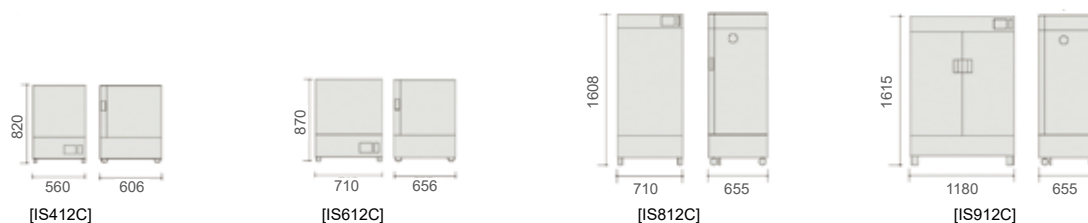


Shelf · supports



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Dimension diagram (mm)



High-temp. Incubators | Fixed Temp. Operation, Air Jacket

IC412C/612C/812C/912C

Operating temp. range RT+5~80°C

Temp. distribution accuracy ±1.0°C (at 37°C)

Internal capacity 97L 159L 318L 567L

From small capacity to large capacity, long-term hot sale constant temperature operation type incubators.

Features

- Due to the air jacket heat transfer method, the temperature distribution is uniform.
- Double door structure reduces heat loss, maintaining a stable constant temperature state.
- The inner door is made of reinforced glass, allowing observation of the interior.
- Easy to operate, fixed temp. operation, quick auto stop operation, auto stop operation, and auto start operation are achievable.
- Deviation correction setting and key lock setting are available.

Safety

- Equipped with self-diagnostic circuit (temperature sensor error detection, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection switch, key lock and other safety functions.



Specifications

Model		IC412C	IC612C	IC812C	IC912C
System		Airflow natural convection			
Performance	Operating temp. range	Room temp. +5~80°C			
	GB standard	Temp. fluctuation	±0.5°C (at 37°C)		
		Temp. uniformity	±1.5°C (at 37°C)		
	JTM standard	Temp. adjusting accuracy	±0.5°C (at 37°C)		
Temp. distribution accuracy		±1.0°C (at 37°C)			
Composition	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Insulating material	Glass fiber			
	Heater	Nichrome heating wire 0.3kW	0.4kW	0.7kW	1.2kW
Exhaust vent		I.D. 30mm×2 (top)		I.D. 30mm×2 (one at the right and one at the left)	
Controllers	Temp. control method	PID control			
	Temp. setting method	Use special function menu keys and ▲/▼ keys to realize digital setting			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display			
		Setting temp. display: Red 4-digit LED digital display			
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop			
Safety device	Additional functions	Deviation correction, key lock, power outage compensation			
	Sensors	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple			
Specifications	Internal dimensions (W×D×H mm)	450×480×450	600×530×500	600×530×1000	1070×530×1000
	External dimensions (W×D×H mm)	560×606×820	710×656×870	710×655×1597	1180×655×1615
	Internal capacity	97L	159L	318L	567L
	Shelf load	Approx. 15kg/shelf			
	Shelf layers	11 layers	13 layers	29 layers	29 layers×2
	Support spacing	30mm			
	Power supply (50/60Hz) rated current	AC220V 1.5A	AC220V 2A	AC220V 3.5A	AC220V 5.5A
	Weight	Approx. 45kg	Approx. 65kg	Approx. 102kg	Approx. 166kg
Accessories	Shelf	Stainless punching mesh plate			
	Supports	2 pcs		4 pcs	8 pcs
Options	Stand	4 pcs		8 pcs	16 pcs
	Stacking fittings	ON61C		-	
	Others	OD40C	OD60C		
		Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), data logger, combination warning lights (standby/running/fault), viewing window, external communication function (RS485), temperature output terminals (4~20mA), external alarm output terminals, time-up output terminals			

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

- Natural Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker



Control panel



Exhaust vent (IC412C/612C)



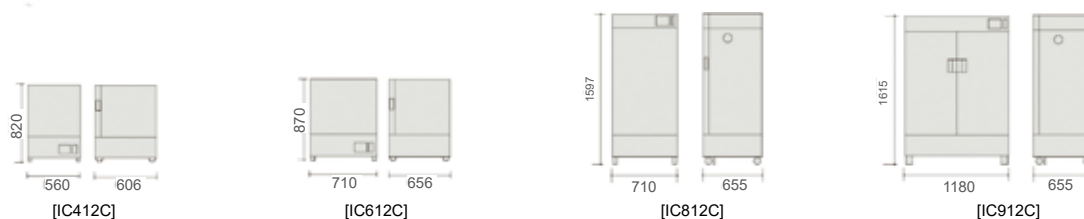
Interior chamber (IC612C)



Shelf · supports



Dimension diagram (mm)



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

High-temp. Incubators | Fixed Temp. Operation, Air Jacket Type, High Temp. Uniformity

ICF410C/610C/810C/910C

Operating temp. range RT+10~80°C

Temp. distribution accuracy ±0.5°C (at 37°C)

Internal capacity 89L 147L 294L 524L

Higher temperature uniformity, long-term hot sale constant temperature operation type incubators.



Features

- Achieved higher precision temperature control and balanced internal chamber distribution through forced circulation by an internal fan.
- Double door structure reduces heat loss, maintaining a stable constant temperature state.
- Inner door is made of reinforced glass, allowing observation of the interior.
- Easy to operate, fixed temp. operation, quick auto stop operation, auto stop operation, and auto start operation are achievable.
- Deviation correction setting and key lock setting are available.

Safety

- Equipped with self-diagnostic circuit (temperature sensor error detection, heater disconnection protection, automatic overheating prevention, SSR short-circuit protection), overheating prevention, overcurrent leakage protection switch, key lock and other safety functions.

Specifications

Model		ICF410C	ICF610C	ICF810C	ICF910C
System		Forced convection			
Performance	Operating temp. range	Room temp. +10~80°C (at an ambient temperature of 23°C, under no load)			
	GB standard	Temp. fluctuation	±0.2°C (at 37°C)		
		Temp. uniformity	±1°C (at 37°C)		
	JTM standard	Temp. adjusting accuracy	±0.1°C (at 37°C)		
Temp. distribution accuracy		±0.5°C (at 37°C)			
Composition	Interior material	Stainless steel plate SUS304			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Insulating material	Glass fiber			
	Heater	Nichrome heating wire			
		0.36kW	0.48kW	0.88kW	1.45kW
	Fan	1 pcs		2 pcs	4 pcs
Exhaust vent	I.D. 30mm×2 (top)		I.D. 30mm×2 (one at the right and one at the left)		
Controllers	Temp. control method	PID control			
	Temp. setting method	Use special function menu keys and ▲/▼ keys to realize digital setting			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display			
		Setting temp. display: Red 4-digit LED digital display			
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop			
	Additional functions	Deviation correction, key lock, power outage compensation			
Sensors	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple				
Safety device		Self-diagnostic function (temperature sensor anomaly, SSR short circuit, heater disconnection, automatic overheat prevention), key lock function, overheat prevention device, overcurrent leakage protection switch			
Specifications	Internal dimensions (W×D×H mm)	450×440×450	600×490×500	600×490×1000	1070×490×1000
	External dimensions (W×D×H mm)	560×606×820	710×656×870	710×655×1597	1180×655×1615
	Internal capacity	89L	147L	294L	524L
	Shelf load	Approx. 15kg/shelf			
	Shelf layers	9 layers	12 layers	29 layers	29 layers×2
	Support spacing	30mm			
	Power supply (50/60Hz) rated current	AC220V 2A	AC220V 2.5A	AC220V 4.5A	AC220V 7A
	Weight	Approx. 45kg	Approx. 65kg	Approx. 102kg	Approx. 166kg
Accessories	Shelf	Stainless punching mesh plate			
		2 pcs		4 pcs	8 pcs
	Supports	4 pcs		8 pcs	16 pcs
Options	Stand	ON61C		-	
	Stacking fittings	OD40C	OD60C	-	
	Others	Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, timer output terminal, central monitoring software, touchscreen controller			

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker



Control panel



Exhaust vent (ICF410C/610C)



Interior chamber (ICF810C)

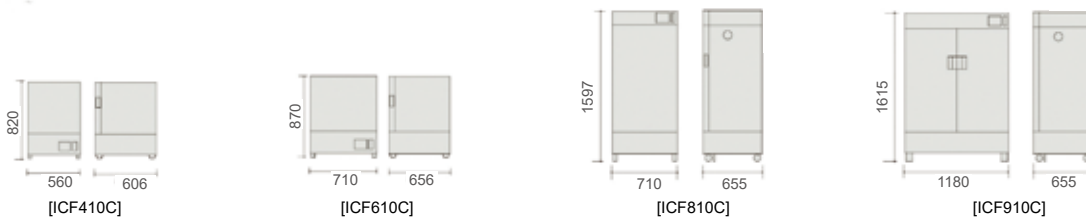


Fan switch (built-in)



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Dimension diagram (mm)



Low-temp. Incubators | Program Operations

IN613C/613CW/813C/913C

Operating temp. range -10~60°C

Temp. fluctuation ±0.5°C

Temp. uniformity ≤2.0°C (at 37°C)

Internal capacity 143L 286L 624L

Widely applicable for various constant temperature tests and environmental experiments.

Features

- Widely applicable for various constant temperature tests and environmental tests.
- Achieved high precision temperature control and balanced internal chamber temperature distribution through forced circulation by a fan blade.
- The outer door uses a large hollow glass and thickened tempered glass viewing window structure design, better observation of the interior while improving insulation. (IN613CW type)
- The inner glass door enhances the insulation effect. Observing the sample through the inner glass door minimizes temperature changes.
- Defrosting can be set to cycle defrost based on the continuous operation time of the compressor.
- After power outage recovery, the operation can automatically restart under set temperature conditions through the power outage compensation function.
- Equipped with safety functions such as compressor overload relay, overheat prevention device, overcurrent leakage protection switch, self-diagnostic circuit (temperature sensor anomaly, heater disconnection, SSR short circuit, automatic overheat prevention), and buzzer alarm during anomalies.



Specifications

Model		IN613C	IN613CW	IN813C	IN913C
System		Forced convection			
Performance	Operating temp. range	-10~60°C			
	GB standard	Temp. fluctuation	±0.5°C		
		Temp. uniformity	≤2.0°C (at 37°C), ≤3.0°C (other working temperatures)		
		Heating time	20~52°C≤20min		
		Cooling time	20~-4°C≤60min		
Composition	Interior material	Stainless steel plate			
	Exterior material	Cold rolled steel plate with chemical proofing coating			
	Viewing window	-	Width 516×height 416 mm	-	
	Insulating material	Foamed polystyrene			
	Refrigerator	158W		300W	519W
	Refrigerant	R134A			
	Defrost structure	Cycle operation			
	Fan blade	Crossflow fan			
	Heater	Iron-chromium wire, 550W		Iron-chromium wire, 750W	
	Sensors	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple			
	Cable port	I.D. 30mm×1 (right side)	I.D. 50mm×1 (right side)	I.D. 30mm×1 (right side)	I.D. 30mm×2 (each side)
	Temp. control method	PID control			
	Temp. setting method	Use special function menu keys and ▲/▼ keys to realize digital setting			
	Temp. display method	Achieved temp. display: Green 4-digit LED digital display			
		Setting temp. display: Red 4-digit LED digital display			
	Timer/timer resolution	1 min~99 h 59 min or 100~999 h 50 min			
	Operating functions	Fixed temp. operation, program operation, auto start, quick auto stop, auto stop			
Program mode	programmable controller with 3 modes (30 segments×1, 15 segments×2, 10 segments×3)				
Additional functions	Temperature compensation function, key lock function, power outage compensation function				
Safety device		Compressor overload relay, overheat prevention device, overcurrent leakage protection switch, self-diagnostic circuit (temperature sensor anomaly, heater disconnection, SSR short circuit, automatic overheat prevention), buzzer alarm during anomalies			
Specifications	Internal dimensions (W×D×H mm)	600×477×500		600×477×1000	1310×477×1000
	External dimensions (W×D×H mm)	710×645×915		710×645×1630	1420×645×1630
	Internal capacity	143L		286L	624L
	Shelf load	15kg/layer			
	Shelf layers/shelf support spacing	13 layers/30mm		23 layers/30mm	
	Power supply (50Hz) rated current	AC220V 3.5A		AC220V 5A	AC220V 10A
	Weight	Approx. 89kg		Approx. 115kg	Approx. 230kg
Accessories	Shelf	Stainless punching mesh plate			
	Supports	3 pcs		5 pcs	8 pcs
	Stand	6 pcs		10 pcs	16 pcs
Options	Stand	ON61C		-	
	Stacking fittings	OD60C		-	
	Others	Shelf plate (1 shelf plate with 2 shelf supports), cable port (30/50mm), micro printer, data logger, combined warning light (standby/operation/fault), viewing window, external communication function (RS485), temperature output terminal (4~20mA), server socket, central monitoring software, external alarm output terminal, timer output terminal (one-out-of-two), touchscreen controller			

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Key Lock Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Interior chamber (IN613C)



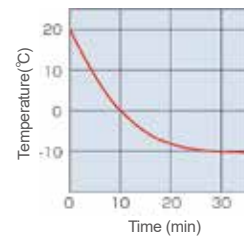
[IN613C]

[IN813C]

Control panel



Temperature fall characteristic curve (IN613C)



Micro printer (optional)



Shaker can be installed (IN613CW)



External output



Shelf · supports



Central monitoring software (optional)



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

2-Chamber Incubators | Upper Chamber with High Temp., Lower Chamber with Low Temp.

INC822C

Natural
ConvectionForced
ConvectionAutomatic
Overheating
PreventerOverheating
PreventerSelf-diagnostic
FunctionPower Failure
Compensation
FunctionOvercurrent
Leakage Circuit
Breaker

Operating temp. range Upper section: RT+5~80°C Lower section: -10~60°C

Temp. uniformity $\leq 2.0^{\circ}\text{C}$ (at 37°C)

Internal capacity Upper section: 159L Lower section: 143L

1 product can simultaneously perform high temperature incubation and low temperature incubation.**Features**

- The upper chamber is a constant temperature chamber with a constant value operation, timer function and overheat prevention device, and the lower chamber is a low temperature incubator with 6 programs setting of 10 segments to 30 segments.
- The lower chamber achieves high-precision temperature control and balanced internal temperature distribution through forced air circulation by fan blades.
- The inner glass door enhances the insulation effect. Observation of samples through the inner glass door minimizes temperature changes.
- Defrosting can be set to cycle defrost based on the continuous operation time of the compressor.
- After power outage, the operation can automatically restart under the set temperature conditions through the power outage compensation function.
- Both upper and lower chambers are equipped with door locks.

Safety

- Equipped with safety functions such as refrigerator overload relay, independent overheat prevention device, overcurrent leakage protection switch, self-diagnosis circuit (temperature sensor abnormality, heater disconnection, SSR short circuit, automatic overheat prevention), buzzer alarm in case of abnormality, etc.

Specifications

Model		INC822C	
Basic structure		Lower chamber: low temperature incubator	Upper chamber: constant temperature incubator
Performance	Operating temp. range	-10~60°C	Room temp. +5~80°C
	GB standard	Temp. fluctuation	$\pm 0.5^{\circ}\text{C}$
		Temp. uniformity	$\leq 2.0^{\circ}\text{C}$ (at 37°C), $\leq 3.0^{\circ}\text{C}$ (other working temperatures)
	Heating time	20~52°C $\leq 30\text{min}$	RT +5~70°C $\leq 70\text{min}$
	Cooling time	20~-4°C $\leq 60\text{min}$	-
System		Forced convection	Natural convection
Composition	Interior material	Stainless steel (SUS304)	
	Heater, insulation material	Nickel-chromium alloy heating wire, foamed polystyrene	
	Heater power	550W	400W
	Air blower	Crossflow fan	-
	Refrigerator, refrigerant	158W R134A	-
	Defrost mechanism	Cycle operation	-
	Cable port	Internal diameter 30 mm right side of the body	Internal diameter 30 mm right side of the body
	Exhaust vent	-	30 mm roof of the body
	Controllers	VS6 type program operation temperature controller	VS6 type fixed value operation temperature controller
	Sensors	Temperature controller: Pt resistance thermometer	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple
Heater control	SSR control		
Additional functions	Deviation correction, key lock, power outage compensation		
Operation functions		Programmable controller with 3 modes (30 segments \times 1, 15 segments \times 2, 10 segments \times 3), auto start, quick auto stop, auto stop	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation
Safety device		Refrigerator overload relay, independent overheat prevention device, overcurrent leakage protection switch, self-diagnosis circuit (temperature sensor abnormality, heater disconnection, SSR short circuit, automatic overheat prevention), buzzer alarm in case of abnormality	
Specifications	Power supply (50Hz) rated current	AC220V 6A	
	External dimensions (W \times D \times H mm)	710 \times 656 \times 1792	
	Internal dimensions (W \times D \times H mm)	600 \times 477 \times 500 Internal volume: 143L	600 \times 530 \times 500 Internal volume: 159L
	Shelf layers/shelf support spacing	13 layers/30mm	
	Shelf load	Approx. 15 kg/piece	
	Product weight	Approx. 160 kg	
Accessories	Shelf	Stainless punching mesh plate	
		3 pcs	2 pcs
	Supports	6 pcs	4 pcs
	Door key	2 pieces per chamber	
Options		Shelf (1 shelf with 2 supports), micro printer, data logger, combination warning light (standby/running/fault), external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time-up output terminal, centralized monitoring software, and touch screen controller	

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

2-Chamber Incubators | Upper And Lower Chambers with Low Temp.

IQ823C

- Forced Convection
- Automatic Overheating Preventer
- Overheating Preventer
- Self-diagnostic Function
- Power Failure Compensation Function
- Overcurrent Leakage Circuit Breaker

Operating temp. range -10~60°C

Temp. uniformity ±1.0°C (at 37°C)

Internal capacity 143L×2

A two-chamber low-temperature incubator capable of independent program operation.

Features

- The controller panel is set on the door, improving operability.
- The process of incubation and preservation, etc., can log 6 programs from 10 segments to 30 segments according to experimental conditions.
- Defrosting can be set to cycle defrost based on the continuous operation time of the compressor. Both chambers are equipped with large cable ports with an internal diameter of 50mm.
- Equipped with safety functions such as refrigerator overload relay, independent overheat prevention device, overcurrent leakage protection switch, self-diagnosis circuit (temperature sensor abnormality, heater disconnection, SSR short circuit, automatic overheat prevention), buzzer alarm in case of abnormality, etc.
- Equipped with door lock.



Internal chamber



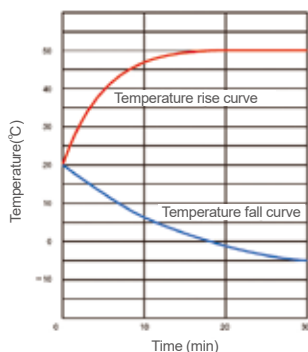
Cable port



Shelf



Heating and cooling curve



Specifications

Model		IQ823C	
System		Forced convection	
Performance	Operating temp. range	-10~60°C (both upper chamber and lower chamber)	
	GB standard	Temp. fluctuation	±0.3°C (at 37°C)
		Temp. uniformity	±1.0°C (at 37°C)
	Temp. arrival time	20°C→52°C≤30min	
	Temp. arrival time	20°C→4°C≤60min	
Composition	Interior material	Stainless steel (SUS304)	
	Exterior material	Cold rolled steel plate with chemical proofing coating	
	Insulating material	Foamed polystyrene	
	Refrigerator	158W×2	
	Refrigerant	R134A	
	Defrost mechanism	Cycle operation	
	Heater	Nickel-chromium alloy heating wire 550W×2	
Cable port	Inner diameter: 50mm (right side)		
Controllers	Temp. control method	PID control	
	Temp. setting method	Digital settings achieved via function menu key and ▲▼ keys	
	Temp. display method	Achieved temp. display:	Green 4-digit LED digital display
		Setting temp. display:	Red 4-digit LED digital display
	Timer	1 min~99 h 59 min and 100~999 h 50 min (including timer waiting function)	
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop, program operation, 3 modes (30 segments×1, 15 segments×2, 10 segments×3)	
Additional functions	Deviation correction, key lock, power outage compensation		
Safety device	Refrigerator overload relay, independent overheat prevention device, overcurrent leakage protection switch, self-diagnosis circuit (temperature sensor abnormality, heater disconnection, SSR short circuit, automatic overheat prevention), buzzer alarm in case of abnormality, etc.		
Specifications	Internal dimensions (W×D×H mm)	600×485×500 each	
	External dimensions (W×D×H mm)	710×656×1792	
	Internal capacity	143L×2	
	Shelf load	Approx. 15kg/shelf	
	Shelf layers/shelf support spacing	13 layers×2 chambers/30mm	
	Power supply (50Hz) rated current	AC220V 7A	
Accessories	Weight	Approx. 165kg	
	Shelf/supports	Stainless punching mesh plate: 2 chambers×3 pieces/2	
Options	Key	2 chambers×2 pieces	
	Options	Shelves, micro printer, data logger, external communication function (RS485), temperature output terminal (4~20mA), external alarm output terminal, time arrival output terminal, centralized monitoring software, touch screen controller	

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CO₂ Incubators | Air Jacket Type, Dry Heat Sterilization

IPE610

Overheating
PreventerSelf-diagnostic
FunctionOvercurrent
Leakage Circuit
Breaker

Operating temp. range RT+5~60°C

CO₂ concentration adjustment range 0~20%

Temp. uniformity ±0.5°C (at 37°C)

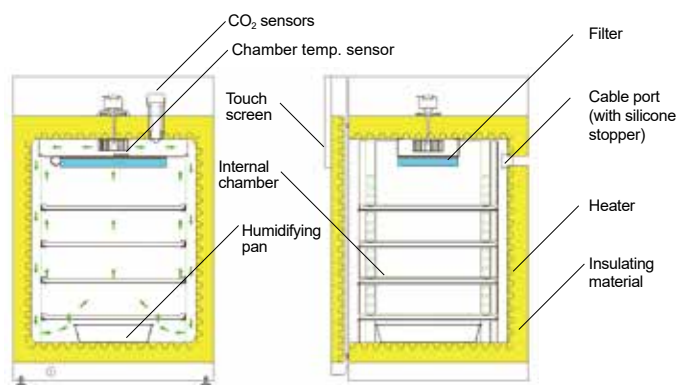
Internal capacity Approx.185L

An air-jacket CO₂ incubator designed to minimize contamination risk, equipped with a HEPA filter and a dry-heat sterilization function.



Features

- Dry heat sterilization at 160°C, 2 h according to pharmaceutical standards. Equipped with a program that can perform dry heat sterilization at 160°C for 2 h. HEPA filter continuously filters the air inside the chamber, reducing the risk of contamination to samples. Inner door is made of reinforced glass, allowing observation of the interior.
- High-precision, long-life CO₂ sensor can perform dry heat sterilization at 160°C without removal. CO₂ sensor contamination is no longer an issue.



[Cross-sectional diagram]

Specifications

Model	IPE610	
System	Air jacket type with dry heat sterilization function	
Performance	Temp. control range	Room temp. +5~60°C
	Temp. fluctuation	±0.3°C (at 37°C)
	Temp. uniformity	±0.5°C (at 37°C)
	Operating humidity range	Above 90%RH
	CO ₂ concentration adjustment range	0~20%
	CO ₂ concentration control accuracy	±0.2% (at 37°C, CO ₂ concentration: 5%)
Composition	Touch screen	7-inch color touch screen
	Exterior/door	Cold rolled steel plate with chemical proofing coating
	Internal chamber/inner door	Stainless steel plate/tempered glass
	Door opening method	Standard right opening door (can be changed to left opening door)
	Insulating material	Centrifugal glass wool
	HEPA filter	Dust collection efficiency: 99.97% for 0.3μm particles
	Chamber temperature control sensor	Pt100 thermistor
	CO ₂ sensors	Infrared method (new single light, dual wavelength method, no drive part)
	Independent overheat prevention sensor	K-type thermocouple
	Heater	900W
Cable port	Φ32mm back side	
Others	Adjustable feet, CO ₂ sample port (OUT), temperature output terminal, CO ₂ concentration output terminal, external alarm output terminal, various records display, trend graph, USB data export port	
Safety device	Overcurrent leakage protection switch, independent overheat prevention device, temperature upper and lower limit abnormalities, CO ₂ concentration upper and lower limit abnormalities, self-diagnosis function, door open alarm, key lock	
Specifications	External dimensions	W660×D650×H1020mm
	Internal dimensions	W540×D520×H665mm
	Internal capacity	Approx. 185L
	Shelf dimension/layers/spacing	W471×D540/15 layers/30mm
	Shelf material/load capacity	Stainless steel shelves/about 7kg/layer
	Power supply (50/60Hz) rated current	AC220V 4.2A
Accessories	Shelf support installation plate 2 pieces, shelf support hanging bars 4 pieces, shelves 4 pieces, shelf supports 8 pieces, humidifying pan 1 piece, silicone stopper for cable port 2 pieces, CO ₂ supply hose 2m, hose clamp 2 pieces, humidifying pan cover 1 piece, sampling tube	

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12 Options

IPE610 Outline

1. High reliability CO₂ sensor

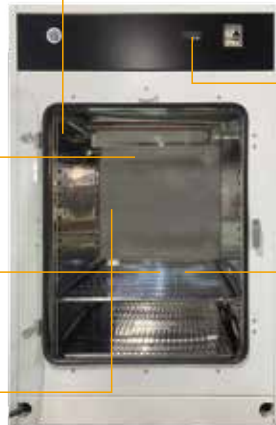
Long-life sensor with new infrared light source.

2. CO₂ consumption IPE610

Improved airtightness significantly reduces CO₂ consumption.
Stable: about 0.34L/h
1 h after door Closes: about 8L/h

3. Internal chamber

Smooth operation of the shelves.
Considering daily sanitation, all corners are R rounded, and the four corners on the back are spherical corners.



4. Power cord hole (Φ32mm)

Convenient for running measurement sensor wiring.

5. Independent overheat prevention device IPE610

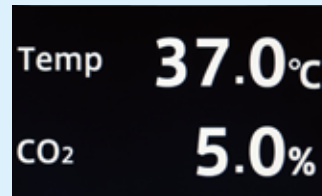
Provides dual protection against overheating inside the chamber.

6. Shelves (stainless steel) IPE610

Load capacity about 7kg.



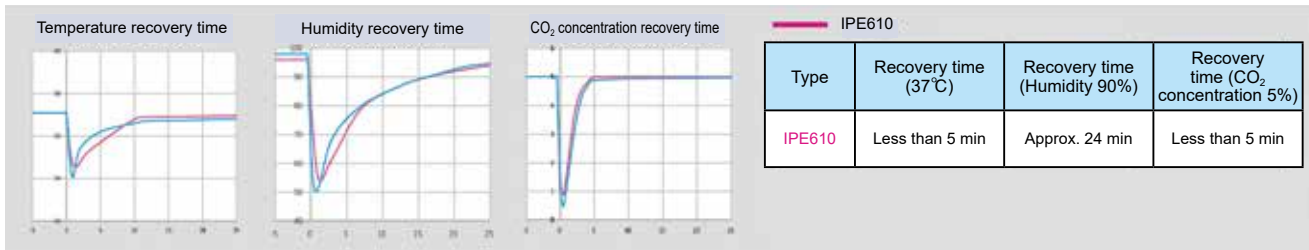
- Resistive touch screen (operable while wear gloves)
- Temperature/CO₂ concentration value/setting value
- Temperature/CO₂ concentration chart display
- Calendar function (date, time)
- Accumulated time function
- Timer alarm function (operation continues)
- Various data and record management
- Various data can be exported via USB



Simple screen (can be turned off)

- The advantage of a large screen is not just the large amount of information displayed. Display mode that is easy to view even from a distance. Three languages: Chinese/English/Japanese.

Recovery performance after door opening for 30 seconds



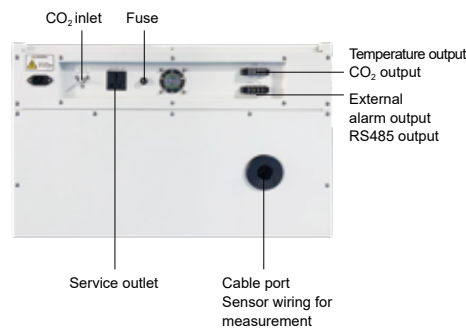
Selectable door opening direction (left/right) IPE610



Right door opening (factory setting)

Left door opening

Independent overheat prevention device and terminal, location IPE610



Standard accessories and optional items selection table IPE610

Option name	Option model No.	Option name	Option model No.
Standard shelves	IPE610_01_02-10	Rust inhibitor for humidifying pan	OBN34C
Standard humidifying pan	IPE610_01_02-29	External communication adapter	OBN24C
Stacking fittings	OBNE62	Pressure regulator set	OBN30-1C
Heat insulating stacking fittings	OIPE60	Pressure regulator set	OBN30-2C
Low bed stand with casters	OBNE60	CO ₂ cylinder switcher	OIT28C
Stand	OBNE61	HEPA filter	IPE610_01_02-09

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Plasma Equipment

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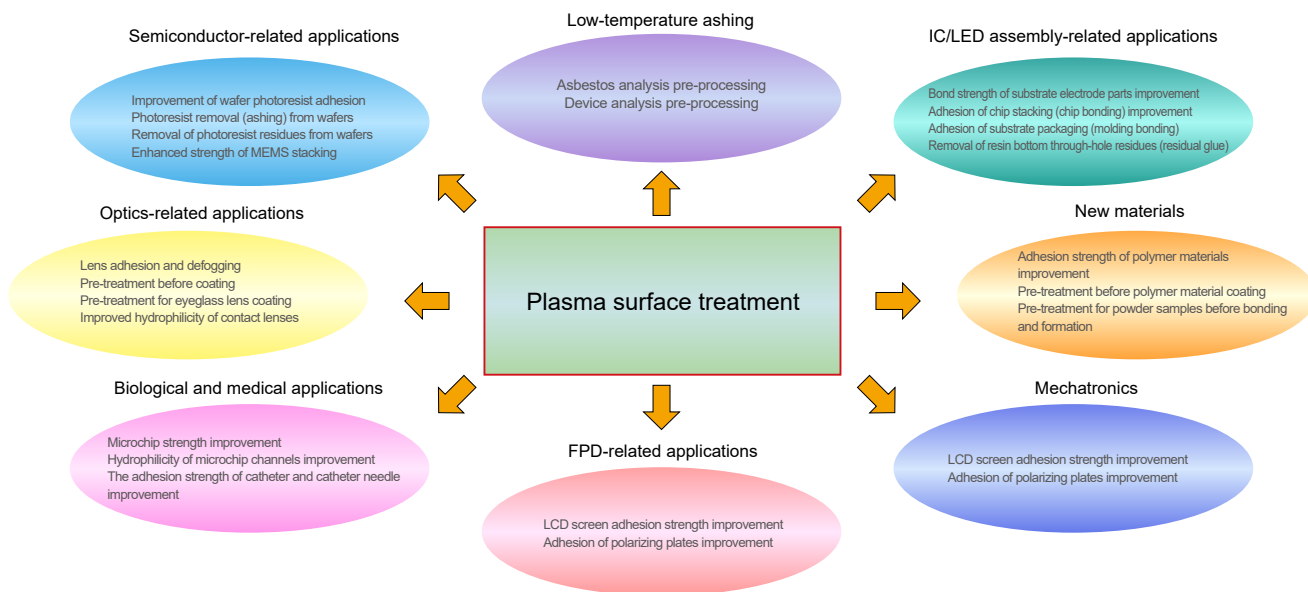
Gas Plasma Reactors	122
Gas Plasma Cleaners	124

From research and development to industrial production, from surface micro-machining to surface treatment modification, plasma cleaners and reactors have very extensive social application needs.

Plasma cleaners and reactors are increasingly used in dry cleaning applications in semiconductors and electronic materials, such as photoresist stripping on silicon wafers, organic film removal, surface activation, micro polishing, and carbon film removal. YAMATO Scientific's plasma products play an active role in these fields.



YAMATO Scientific's plasma surface treatment equipment is not only used for cleaning applications related to semiconductors but also has broad applications in various other fields.



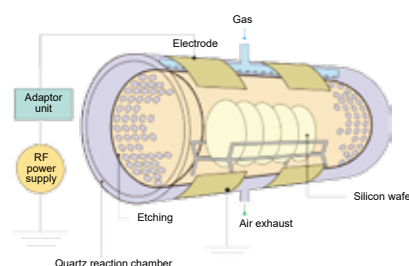
Plasma treatment has significant effects on enhancing the strength of various bonding, coating, and plating applications.

DP Mode Cylindrical Type PR/PM Series

Use in photoresist stripping from wafers, organic film removal using oxygen or argon gas, surface activation, micro polishing, or carbon film removal in a wide range of fields.



Cylindrical Structure (DP)

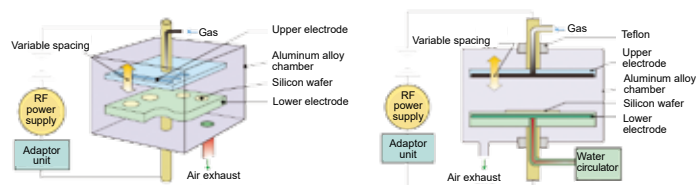


RIE DP mode parallel plate type PDC/V series

RIE/DP 2 modes of plasma processing, it can be used for etching and dry cleaning of silicon wafers, and COB surface activation of sensors and others, improving the stability of wire bonding, and etching of oxides and hydroxides, removal bonding barriers from electrode surfaces.



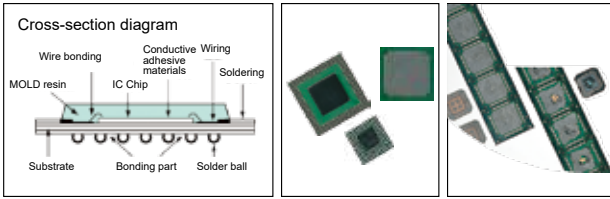
Control panel



Plasma super cleaner

IC packaging technology

- BGA (/Ball Grid Array)
- CSP(/Chip Size Package)
- Imaging equipment assembly



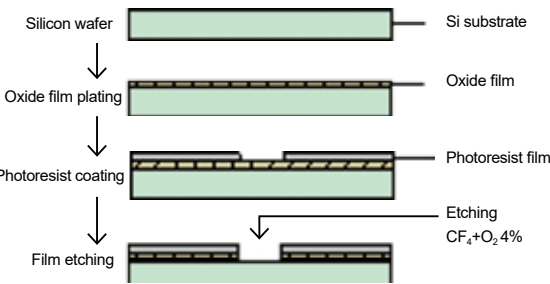
BGA(all Grid Array Package)

BGA Type LSI

Plasma cleaning effect on BGA packaging

Plasma device etching and ashing

Etching



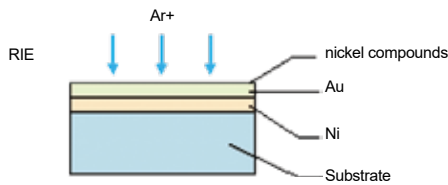
Ashing



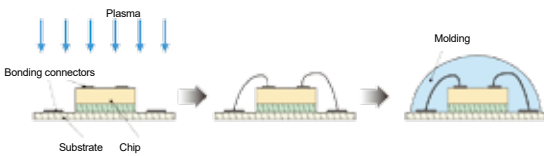
Plasma device etching and ashing modes

IC packaging has evolved from ceramic to molded resin, with wire material transitioning from Ni, Ai to Cu. Plasma etching and cleaning technology can effectively meet the demands of these product advancements.

Ar plasma for metal oxide removal (PDC/V Series)



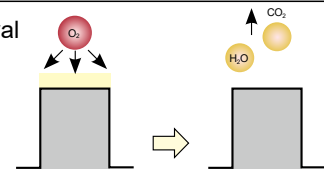
Substrate cleaning (V series)



Plasma etching and ashing modes

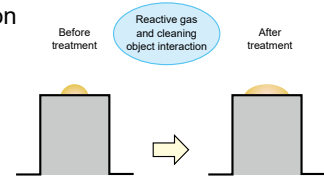
Organic film removal

- Molding release agents
- Solder residues
- Oil and grease (thin films)
- Organic films (buffing)



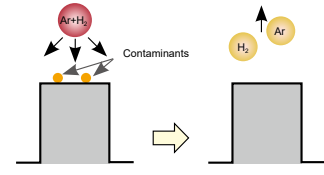
Surface modification

- Polyester
- Polypropylene
- Teflon
- Ceramic
- Polyimide



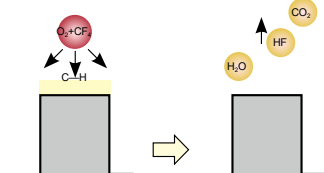
Surface cleaning

- Material surface



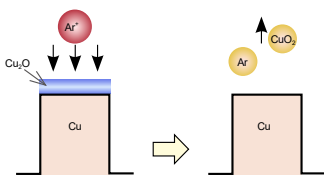
Surface etching

- Glass epoxy
- Resin polyimide



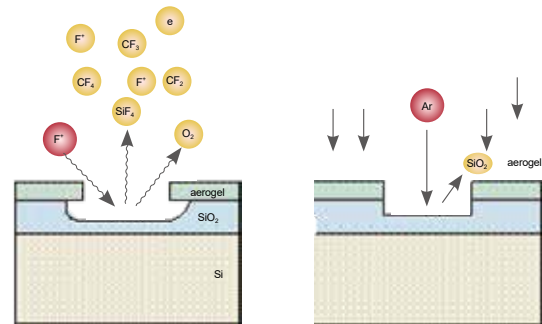
Metal oxide removal

- Cu2O, CuO
- Al2O3



Dry etching

- Barrel
- DP
- Parallel plate
- Sputtering

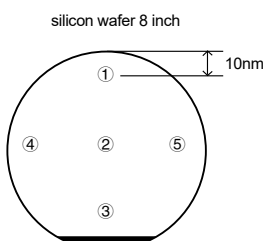


Chemical etching (isotropic)

Physical etching (anisotropic)

Measurement example

Measurement position



Parallel plate electrode experiment 1

Test material: silicon wafer 8 inch
Photoresist: positive

Electrode	Parallel plate electrode working surface Φ350 electrode distance 60mm				
RF power	500W				
Processing time	5min				
Gas flow rate	500sccm				
Pressure	100Pa				
Working surface temperature	180°C				

Measurement position	①	②	③	④	⑤	Average value
ini (Å)	40290	40540	40930	40620	40670	40610
after (Å)	18350	19980	15930	16150	16690	17420
ini-after (Å)	21940	20560	25000	24470	23980	23190
reta (Å/min)	4388	4112	5000	4894	4796	4638

Maximum value	5000
Minimum value	4112
Uniformity	9.573092

Parallel plate electrode experiment 2

Test material: silicon wafer 8 inch
Photoresist: positive

Electrode	Parallel plate electrode working surface Φ350 electrode distance 60mm				
RF power	500W				
Processing time	5min				
Gas flow rate	500sccm				
Pressure	100Pa				
Working surface temperature	160°C				

Measurement position	①	②	③	④	⑤	Average value
ini (Å)	40450	40480	40820	40780	40560	40618
after (Å)	25290	24780	24250	24640	23890	24570
ini-after (Å)	15160	15700	16570	16140	16670	16048
reta (Å/min)	3032	3140	3314	3228	3334	3209.6

Maximum value	3334
Minimum value	3032
Uniformity	4.704636

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Gas Plasma Reactors | DP Mode, Barrel

PR500/510

Made in
Japan

High frequency output Max. 500W

Reaction chamber $\Phi 215 \times 305 \text{mm}$

Low-temperature plasma, classic barrel.



PR500



PR510

PR500: manual control

PR510: automatic touch screen control

A long-standing, classic low-temperature plasma model. With automatic tuning and touchscreen operation (PR510), it offers improved operability and safety.

Applications

- Photoresist removal
- Component cleaning
- Surface activation
- Micro-polishing
- Compatible with silicon wafers and glass substrates

Features

- Large-diameter ($\Phi 215 \text{ mm}$) quartz reaction chamber
- Compact, integrated design
- Simple touchscreen operation (PR510)

Internal chamber



Silicon wafer ashing state



Specifications

Model		PR500	PR510
Mode		DP mode, barrel	
Control section	High frequency output power	Max. 500W	
	Frequency	13.56MHz	
	Tuning method	Automatic	
Reaction	Reaction chamber	Quartz $\Phi 215 \times 305 \text{mm}$	
	Reaction gas	2 Systems (O_2/CF_4)	
	Control	Manual	Touch screen automatic control
	Piping material	Stainless steel, teflon	
External dimension		W438×D520×H760mm	W520×D630×H760mm
Weight		Approx. 60kg	Approx. 70kg
Power supply *		Single phase AC100V 9A	3-phase AC200V 8A

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

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Gas Plasma Reactors | Compact, Benchtop

PR200

Made in Japan

High frequency output 200W

Reaction chamber $\Phi 100 \times L160\text{mm}$

A compact benchtop plasma cleaner for applications ranging from surface modification to cleaning.

Applications

- Introducing functional groups onto polymer surfaces to improve adhesion. Through oxidation reactions, functional groups such as $-\text{OH}$, $>\text{C}=\text{O}$, and $-\text{COOH}$ are generated on the surface.
- In nitrogen plasma, nitrogen is incorporated into the surface, generating functional groups such as $-\text{NH}_2$.
- Silicon wafer etching.
- Surface modification of various materials (metals, polymers, films, ceramics, etc.).
- Asbestos pre-treatment (membrane filter ashing).
- Applications in electronics and biochemical fields.
- Low-temperature ashing (polymers, coal, food, etc.).
- Bonding PDMS chips using glass and PDMS plates.
- Removal of organic contaminants from surfaces.

Features

- High-output type with 200 W RF power.
- Compact benchtop design suitable for installation in limited spaces.
- Automatic tuning for stable operation and ease of use.
- Can also be used as a plasma reactor for ashing applications.



Reaction chamber

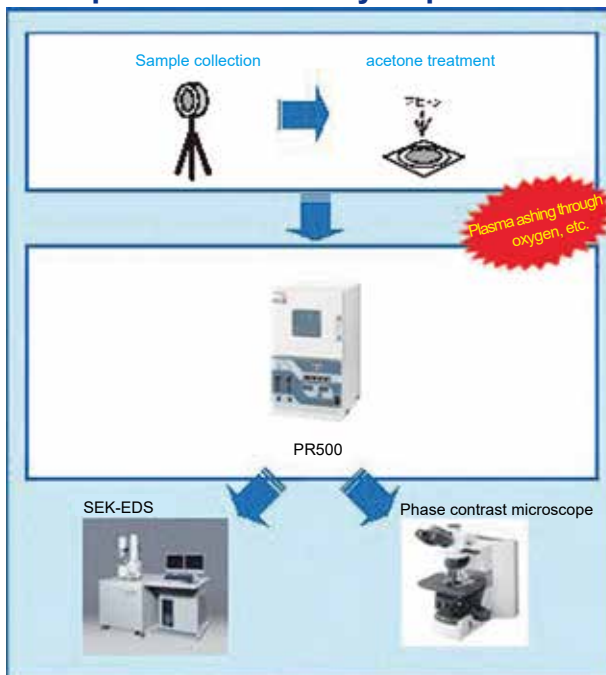


Single chamber (PR200)



Test material rack

Example: asbestos analysis pre-treatment



Model		PR200
Mode		DP mode, barrel
Control	High frequency output	Max. 200W
	Frequency	13.56MHz
	Tuning method	Auto-matching
Reaction	Reaction chamber	Heat-resistant glass $\Phi 100 \times 160\text{mm}$
	Reaction gas	1 system (oxygen) flow meter
	Control	Manual shut-off valve
	Piping material	Stainless steel, teflon
External dimensions		W350×D400×H500mm
Weight		Approx. 25kg
Power supply *		AC100V 14A

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

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Gas Plasma Cleaners | Economic, Low-frequency

PM100

Made in Japan

Low frequency output	Low-frequency, high-voltage power supply	Reaction chamber	I.D 100mm×L160mm
----------------------	--	------------------	------------------

A simple plasma device that uses oxygen as the process gas.

Overview

- A barrel-type chamber generates plasma uniformly throughout the chamber.
- The system produces a gentle plasma using low-frequency power.
- Suitable for biochemical applications.
- Uses oxygen as the process gas.

Application

- Biochemical applications (e.g., organic membrane treatment on glass substrates).
- Cleaning of glassware (sterilization).
- Cleaning of sample holders for TEM/SEM/FIB systems, etc.
- Treatment of sensor probes used in analytical instruments.
- Accelerated testing of coated films.
- Bonding of PDMS chips to glass or PDMS plates.
- Degradation and accelerated testing of coated films, etc.



Chamber



Specifications

Model	PM100	
Plasma source	Low-frequency, high-voltage power supply	
Gas Flowmeter	Oxygen gas, flow rate 30 - 300 mL / min	
Reaction chamber	I.D 100mm×L160mm	
Exterior dimensions / Weight	W310mm×D300mm×H448mm / Approx. 16kg	
Utility	Power supply (50/60Hz) *	Single phase AC100V 10A
	Vacuum pump connection port	O.D 15mm with hose fitting (Recommended pump exhaust speed 30L / min)
	Gas connection port	O.D 6.35mm with hose fitting

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Gas Plasma Cleaners | Economic, Low-frequency

PM110C

Low-frequency output Low-frequency high voltage power supply Reaction chamber Chamber dimensions $\Phi 100 \times L160\text{mm}$

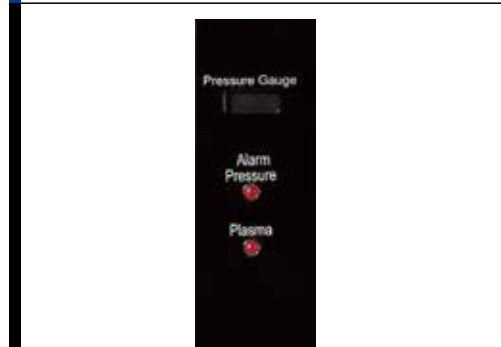
Economic, surface modification and cleaning of target objects by the active action of ionized gas.



Features

- Economic plasma cleaner.
- Simple plasma treatment operation.

Control panel



Viewing window



Promising applications

applications <cleaning>

- Removal of organic films (oil, wax, etc.).
- Cleaning of electronic parts, optical parts, and small components, pre-treatment before electroplating, coating.
- Bacteria disinfection (cell membrane etching by oxygen radicals or disinfection by UV).

<Surface modification>

- Imparting functional groups to the surface of polymer materials → Improving adhesion and adhesion. Through oxidation reaction, functional groups such as -OH, >C=O, -COOH are generated on the surface (affected by trace amounts of water and carbon dioxide).
- Improving the adhesion of various polymers and the biocompatibility of medical and dental materials.
- By treating the culture dish, it can be evenly coated with medium, etc.

<Etching>

- Etching of organic polymer materials. For organic polymers, oxygen can become the etching gas, allowing for resist etching.
- Promoting seed germination experiments.

Specifications

Model	PM110C
Plasma generation source	Low-frequency high voltage power supply, output approx. 50w, frequency 60KHz, output voltage 10kV
Electrode structure	Capacitive type, 2 segments
Gas flow meter	For oxygen, flow rate 30~300mL/min
Vacuum adjustment valve	For vacuuming, returning to atmosphere
Reaction chamber dimensions	Chamber dimensions $\Phi 100 \times L160\text{mm}$
External dimensions (W×D×H mm)	310×300×448
Power supply 50/60Hz	AC220V 10A
Vacuum pump interface	KF25 (recommended pumping speed 30L/min)
Gas interface	Outer diameter $\Phi 6.35\text{mm}$

Plasma experiment examples



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Gas Plasma Cleaners | RIE-DP Mode, Parallel Plate Electrode

PDC200/210/510

Made in Japan

High frequency output 300W (PDC200)/500W (PDC210/510)

Electrode dimensions 250×170mm (PDC200/210)/410×210mm (PDC510)

Compact plasma cleaners for research and development.

High-performance benchtop plasma cleaners designed for ease of use, suitable for electronic materials and a wide range of R&D applications.

Applications

- Plasma cleaning of CSP, BGA, and COB substrates
- Removal of organic films and metal oxides
- Dry cleaning of printed circuit boards
- Surface/interface activation
- LED packaging

Features

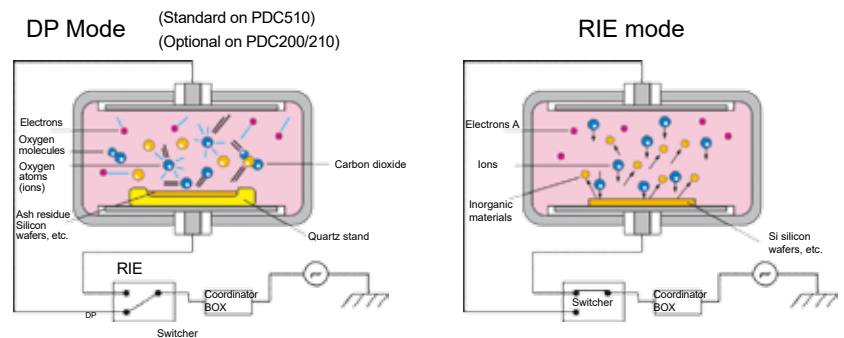
- DP mode (standard on PDC510, optional on PDC200/210)
- RIE mode
- High-uniformity electrode structure
- Simple touch screen controller operation



Internal chamber



Configuration diagram



Specifications

Model	PDC200	PDC210	PDC510
Plasma mode	RIE (DP mode optional)		RIE/DP
Electrode structure	Parallel plate (fixed)		
High frequency output	Max. 300W	Max. 500W	
Frequency	13.56MHz		
Control/display	LCD touch screen		
Reaction chamber dimensions	W400×D250×H150mm		W500×D300×H200mm
Electrode dimensions	W250×D170mm		W410×D210mm
Reaction chamber material	Aluminum		
Reaction gas	2 Systems (Ar, O ₂)		
Filling gas	N ₂ or dry air		
Reaction gas flow control	Flow meter	Mass flow controller	
Vacuum pump	Optional	Oil pump (Approx. 345L/min) standard equipment	Oil pump (Approx. 500L/min) standard equipment
Gas inlet	2 reaction gas, 1 filling gas		
External dimensions	W540×D600×H600mm	W540×D600×H600mm	W700×D700×H1285mm
Weight	Approx. 100kg	Approx. 105kg	Approx. 180kg
Power supply *	Single phase AC100V 10A	3-phase AC200V 6A	3-phase AC200V 8A

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Water Purifiers

Contents

Water Purifiers 130



Reduces TOC value, high-performance pure water production device meeting JIS K0557 A4 standard.

Water quality specifications japan industrial standard JIS K 0557

Items ^{※1}	Type and water quality			
	A1	A2	A3	A4
Conductivity mS/m (25℃)	Below 0.5	0.1 ^{※2,3} or below	0.1 ^{※2} or below	0.1 ^{※2} or below
Organic carbon (TOC) mgC/L	Below 1	Below 0.5	Below 0.2	Below 0.05
Zinc μgZn/L	Below 0.5	Below 0.5	Below 0.1	Below 0.1
Silicate μgSi ₂ /L	-	Below 50	Below 5.0	Below 2.5
Chloride μgCl ⁻ /L	Below 10	Below 2	Below 1	Below 1
Sulfate μgSO ₄ ²⁻ /L	Below 10	Below 2	Below 1	Below 1
Usage examples	Cleaning of Instruments	General chemical analysis	Trace component testing	Trace component testing

※1. Choose required items based on testing methods.

※2. Conductivity meter actual measured value at pure water device sampling port.

※3. Final process ion exchange device sampling port connected to precision filter, conductivity meter actual measured value below 0.01ms/(25℃).

Classified by JIS K 0557



[Purity] low → high

- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers**
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

Main products and uses

Type	Model	Collection method	Pure water collection		Category (JIS K 0557)		Usage examples (JIS K 0557)				Page
			Distilled water	Ion exchange water	Distilled water	Ion exchange water	A1	A2	A3	A4	
							Cleaning of instruments	General scientific analysis	Preparation of reagents trace analysis	High-sensitivity trace analysis	
Standard type	WG253/1013 WGS201	Ion exchange → distillation → filtration	○	○	A4	A4	○ ○	○ ○	○ ○	○ ○	132
Ultra-high-performance type	WGH202	Ion exchange → Distillation → Ion exchange → Filtration	○	○	A4	A4	○ ○	○ ○	○ ○	○ ○	130
Economical type	WG206	Ion exchange → distillation	○	○	A4	A4	○ ○	○ ○	○ ○	○	135

○ Distilled water ○ Ion exchange water

Model overview

Automatic distillation series

Ultra-Pure Water Production Device Water Purification Systems

Model	Ion exchange collection volume (Approx L/min)	Distilled water production volume (Approx L/h)	Collection method
WGS201 WG253	1.0	1.5	
WG206	1.0	1.5	
WG1013	1.0	5.0	
WGH202	1.0	1.5	

II. Ion exchange water collection II. Distilled water collection

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- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
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- Options 12

Water Purifiers | Ultimate Model

WGH202

Distillation capacity 1.5L/h

Purified water collection Distilled water/ion-exchange water

Water quality level Distilled water: ASTM D1193 Type1; ion-exchange water: JIS K0557 A4

Simultaneously collects distilled water and ultrapure water with a resistivity of over 18MΩ·cm. Meets ASTM D1193 Type 1 and JIS K0557 A4 water quality specifications.



Features

- Collect ultrapure water (resistivity over 18MΩ·cm).
- The water tank is equipped with a UV sterilization lamp.
- Automatically circulates internally periodically to prevent water degradation of the ultrapure water collection path and water tank.
- Equipped with a manual internal circulation function.
- Complies with the water quality standards for elemental analysis specified by the NADCAP certification requirements for aircraft component manufacturers, ASTM D1193 Type 1.
- Meets a wide range of needs from general analysis to various trace analyses. ※ ASTM D1193 Type 1 is the highest grade recognized by ASTM International for chemical analysis water.

Specifications

Model		WGH202
Function	Water quality	Ion exchange water A4 Distilled water A4
	Distilled water production	~1.5L/h
	Distilled water tank capacity	30L
	Dispenser	○
Method / Performance ¹⁾	7-inch LCD screen	○
	Water sampling method	Ion exchange water Ion exchange → Filtration Distilled water Ion exchange → Distillation → Ion exchange → Filtration
Configuration	Pure water sampling	Ion exchange water / distilled water
	Distilled water production	~1.5L/h
	Distilled water delivery rate ²⁾	Drip~approx. 1.5L/min (with variable flow rate function) (distilled ultrapure water)
	Ion exchange water delivery rate ²⁾	~1.0L/min (without variable flow rate function)
	Setting range of production ³⁾	0.01L~tank storage volume / Continuous water sampling
	Condenser	Hard glass
	Heater	Ceramic heater 1.2kW
	Pretreatment cartridge	0.1 μm hollow fiber membrane with activated carbon (PWF-1)
	Ion exchange resin cartridge	CPC-S 4L type, 1 pc. (Activated carbon cartridge)
	High purity cartridge	CPC-H2 4.4 L type, 1 pc. (Activated carbon cartridge)
Standards	Final filtration of distilled & ionized water	0.1μm × 2 (membrane filter)
	Leak detection	Forced shutoff of water solenoid valve by leak detection sensor in case of water leakage
	Distilled water storage tank	Polyethylene tank, 30L
	Distilled water UV sterilization	LED-UV for tank
	Water sampling tray	Push-open type, Load capacity: 10kg, for 5L hand-held beaker
	Multi-purpose distilled water sampling port	For connection of Φ8 rigid tube (right side of main unit)
	Water level detection	Float switch, 5-step detection
	Raw water pressure range	0.05~0.5MPa
	Amount of raw water required	~2.0 L/min
	Ambient temperature range	5~35°C
Display / Setting	Power supply (50/60Hz) ⁵⁾	AC110/115/120/220/230/240V, with step-down transformer
	External dimensions ⁴⁾	W540×D570×H775 mm
Other Displays	Weight	Approx. 68kg
	Water level display	Digital (7-inch LCD panel)
	Water quality display	Digital (conductivity / resistivity switching)
	Other Displays	Notification (including advance) : Various consumables / Scheduled maintenance Warning : Water cut off / No record of trend data/Power failure / Low distilled water quality Abnormality : Controller / Water leak / Heater overheat, Disconnection / Tank water level gauge / Boiler water level / Boiler water level gauge / Boiler drainage route / Cooling water, Feed water valve / Water quality meter / Water sampling pump / Low flow (ion exchange water) / Water sampling route / UV lamp abnormality / Internal communication
Accessories	Water supply hose (2m) / Water supply hose filter / Connecting hose assembly / Pretreatment cartridge / Ion exchange resin cartridge / High purity cartridge / Air vent filter / Membrane filter (2 pcs) / Water collection port cover (2 pcs) / Magnetic hook (2 pcs) / Water collection procedure seal / Multi-purpose distilled water collection port connection tube (2m) / Instruction manual	

*1 Performance values are for WGH 202, WG253, WGS201, and WG206 : Power supply AC 100V, room temperature 23°C ±5°C, humidity 65% RH±20%. WG1013 : Power supply AC 200V, room temperature 23°C ±5°C, humidity 65% RH ±20%. The ambient temperature range of this product is 5 to 35°C. The raw water temperature range is 5 to 30°C. If the raw water temperature is high, the wastewater temperature may be higher. If the raw water temperature is high, the drainage temperature may be high. If the temperature exceeds 60°C, a drainage trap is required. *2 The guaranteed performance range is 0.2 to 0.5MPa of raw water pressure. The amount of water sampled varies depending on changes in the raw water pressure. *3 The accuracy of the quantitative water sampling is about 10%. *4 Protrusions are not included. *5 Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

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11 Stirrers & Shakers

12 Options

Made in Japan

The Ultimate Model for Distilled Ultrapure Water by Yamato Scientific

Generally, water with a resistivity of 18MΩ·cm or higher is referred to as “Ultrapure water”

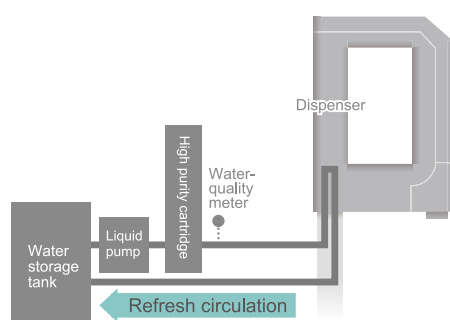
The WGH202 uses high-purity cartridges (CPC-S, CPC-H2) to collect ultrapure water with a resistivity of 18MΩ·cm or higher.

The distilled ultrapure water (after refresh circulation) collected by this model complies with ASTM D1193 Type 1, which is specified as a water quality standard for atomic absorption analysis inspections under the NADCAP international certification system, which aircraft component manufacturers are required to undergo.

Always Enjoy High-Purity Water with Refresh Circulation

Our refresh circulation function keeps the water quality in both the storage tank and the dispenser circulation path at optimal levels.

Periodic automatic circulation, combined with manual circulation before dispensing, ensures that you always have access to reliably high-purity water.



Water Purifier (Auto Still) WGH202



【Main specifications】

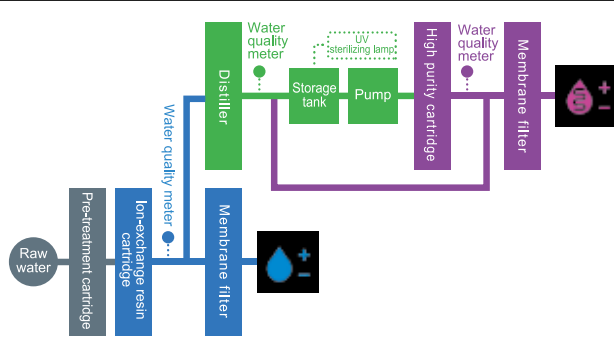
Dimensions : W540×D570×H775mm (not including protruding parts)

Weight : Approx. 68kg

Water quality level : A4 (Ion-exchanged water / Distilled ultra pure water)

Distilled water production capacity : 1.5L/h, Tank capacity 30L

Block Diagram



Distilled ultrapure water complies with to ASTM D1193 Type 1 and the highest level A4 water quality grade (JIS K0557 A4 standard).

The ASTM D1193 Type 1 water quality standard specifies criteria for electrical conductivity, total organic carbon (TOC), total silica, chloride ions, and sodium.

WGH202 complies with this standard because it produces Type 1–grade water by distillation, as required by the standard (distillation or an equivalent purification method).

On the other hand, WG253 in the same series does not meet this standard because it is not equipped with the additional post-distillation high-purity purification stage required for this grade.

Note that both distilled water and ion-exchanged water are classified as A4 water quality, the highest level specified by JIS. The electrical conductivity of distilled water may appear relatively high; however, this is mainly due to carbon dioxide absorption during the distillation process and is not caused by impurities such as metal ions.

Water quality analysis results (WGH202 and WG253)

Item	Standard		Measured value					
	JIS K0557 Standard A4	ASTM D1193Type1	Raw water	WGH202 Ion-exchanged water	WGH202 Distilled ultrapure water	Raw water	WG253 Ion-exchanged water	WG253 Distilled water
Electrical conductivity (mS/m)	≦0.1	≦0.00555	18.9	<0.0055	<0.0055	15.1	0.0055	0.079
Total organic carbon (TOC) (μg/L)	≦50	≦50	<300	8.2	6.8	300	11.4	8.4
Zinc (μg/L)	≦0.1	-	<20	<0.1	<0.1	<20	<0.1	<0.1
Silica (μg/L)	≦2.5	-	34000	<0.1	<0.1	22000	<0.1	1.8
Total silica (μg/L)	-	≦3	31900	0.6	2.5	-	-	-
Chloride ion (μg/L)	≦1	≦1	7000	<0.1	<0.1	8000	<0.1	<0.1
Sulfate ion (μg/L)	≦1	-	14700	<0.1	<0.1	16700	<0.1	<0.1
Sodium (μg/L)	-	≦1	142000	<0.1	<0.1	-	-	-
Total water quality level				JIS A4	ASTM Type1 JIS A4			JIS A4

- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
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- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

Water Purifiers | Standard, Large, Slim

WG253/1013, WGS201

Distillation capacity	1.5L/h (WG253/WGS201)	5L/h (WG1013)	Collection method	Ion exchange method → Distillation method → Filtration method	Purified water collection	Ion-exchange water/Distilled water	Water quality level	A4 (Ion-exchange water)/A4 (Distilled water)
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High-performance pure water system that reduces TOC levels and complies with JIS K 0557 A4 standards.

Features

- High-purity water is produced through ion exchange → distillation → filtration.
- A pretreatment column (activated carbon + 0.1μm hollow-fiber membrane) removes impurities in the feed water, including microorganisms, residual chlorine, and organic matter.
- A high-performance ion-exchange resin column (CPC-S, 4L) provides high-purity water with low conductivity and low TOC levels.
- A filter (0.1μm hollow-fiber membrane) is provided as standard at the water outlet.
- Distilled water storage tank capacity is 30L (WG253), 100L (WG1013), and 10L (WGS201).
- The display panel indicates the replacement timing for consumables.
- The drawer-type water collection stand includes a drainage function, enabling safe water collection.



Specifications

Model		WG253	WG1013	WGS201
Function	Water quality	Ion exchange water	A4	A4
	Distilled water production	~1.5L/h	~5L/h	~1.5L/h
	Distilled water tank capacity	30L	100L	10L
	Dispenser	○	○	○
7-inch LCD screen		○	○	○
Method / Performance ¹⁾	Water sampling method	Ion exchange → Filtration	Ion exchange → Distillation → Filtration	Ion exchange → Distillation → Filtration
	Pure water sampling	Ion exchange water / distilled water		
	Distilled water production	~1.5L/h	~5L/h	~1.5L/h
	Distilled water delivery rate ²⁾	Drip~approx. 2.5L/min (with variable flow rate function)		
Ion exchange water delivery rate ²⁾		~1.0L/min (without variable flow rate function)		
Setting range of production ³⁾		0.01L~tank storage volume / Continuous water sampling		
Configuration	Condenser	Hard glass		
	Heater	Ceramic heater 1.2kW	Ceramic heater 1.9kW×2 pcs.	Ceramic heater 1.2kW
	Pretreatment cartridge	0.1 μm hollow fiber membrane with activated carbon (PWF-1)		
	Ion exchange resin cartridge	CPC-S 4L type, 1 pc. (Activated carbon cartridge)	CPC-S 4L type, 2 pcs. (Activated carbon cartridge)	CPC-S 4L type, 1 pc. (Activated carbon cartridge)
	Final filtration of distilled & ionized water	0.1μm×2 (membrane filter)		
	Leak detection	Forced shutoff of water solenoid valve by leak detection sensor in case of water leakage		
	Distilled water storage tank	Polyethylene tank, 30L	Polyethylene tank, 100L	Polyethylene tank, 10L
	Distilled water UV sterilization	Option		
	Water sampling tray	Push-open type, Load capacity: 10kg, for 5L hand-held beaker		Push-open type, Load capacity: 5kg
	Multi-purpose distilled water sampling port	For connection of φ8 rigid tube (right side of main unit)		
Standards	Water level detection	Float switch, 5-step detection	Float switch, 5-step detection	Float switch, 4-step detection
	Raw water pressure range	0.05~0.5MPa	0.1~0.5 Mpa	0.05~0.5 Mpa
	Amount of raw water required	~2.0 L/min	~2.6 L/min	~2.0 L/min
	Ambient temperature range	5~35°C		
Power supply (50/60Hz) ⁴⁾	AC110/115/120/220/230/240V, with step-down transformer	AC220/230/240V, with step-down transformer	AC110/115/120/220/230/240V, with step-down transformer	
External dimensions ⁴⁾	W540×D570×H775 mm	W550×D570×H1715 mm	W350×D570×H845 mm	
Weight	Approx. 63kg	Approx. 113 kg	Approx. 54kg	
Display / Setting	Water level display	Digital (7-inch LCD panel)		
	Water quality display	Digital (conductivity / resistivity switching)		
	Other Displays	Notification : Various consumables / Scheduled maintenance Warning : Water cut off / No record of trend data/Power failure / Low distilled water quality Abnormality : Controller / Water leak / Heater overheat, Disconnection / Tank water level gauge / Boiler water level / Boiler water level gauge / Boiler drainage route / Cooling water, Feed water valve / Water quality meter / Water sampling pump / Low flow (ion exchange water) / Water sampling route / UV lamp abnormality / Internal communication		
	Accessories	Water supply hose (2 m) / Water supply hose filter / Connecting hose assembly (2 pcs) / Pretreatment cartridge / Ion exchange resin cartridge (2 pcs) / Air vent filter / Membrane filter (2 pcs) / Filter cover (2 pcs) / Magnetic hook (2 pcs) / Operation manual (operation section, structure section)	Water supply hose (2m) / Water supply hose filter / Connection hose assembly (2 pcs) / Pretreatment cartridge / Ion exchange resin cartridge (2 pcs) / Air vent filter / Membrane filter (2 pcs) / (2 pcs) / Filter cover (2 pcs) / Magnetic hook (2 pcs) / Adjuster clamp (4 pcs) / Operation manual (Operation Section, Structure Section)	Water supply hose (2 m) / Water supply hose filter / Connection hose set / Pretreatment cartridge / Ion exchange resin cartridge / Air vent filter / Membrane filter (2 pcs) / Water inlet cover (2 pcs) / Magnetic hook (2 pcs) / Fall protection fixture with mat (OA 206) / Operation manual (Operation section and structure section)

Touch panel (7-inch)



Magnet-type Dispenser



¹⁾ Performance values are for WG202, WG253, WGS201, and WG206 : Power supply AC 100V, room temperature 23°C ±5°C, humidity 65% RH ±20%. The ambient temperature range of this product is 5 to 35°C. The raw water temperature range is 5 to 30°C. If the raw water temperature is high, the wastewater temperature may be higher. If the raw water temperature is high, the drainage temperature may be high. If the temperature exceeds 60°C, a drainage trap is required. ²⁾ The guaranteed performance range is 0.2 to 0.5MPa of raw water pressure. The amount of water sampled varies depending on changes in the raw water pressure. ³⁾ The accuracy of the quantitative water sampling is about 10%. ⁴⁾ Protrusions are not included. ⁵⁾ Voltage modifications other than the listed specifications are also available. Please contact us for details.

Made in Japan

Flagship Model of the Auto Still Series

This flagship model represents the Auto Still series. Its control panel features a color LCD and a new dispenser, improving ease of use. The display shows water-quality trends, consumable replacement alerts, and illustrated replacement procedures for intuitive operation. The dispenser is designed for accurate dispensing, and its magnetic mount allows flexible positioning on the unit to suit different workflows.

Water purifier (Auto Still) WG1013



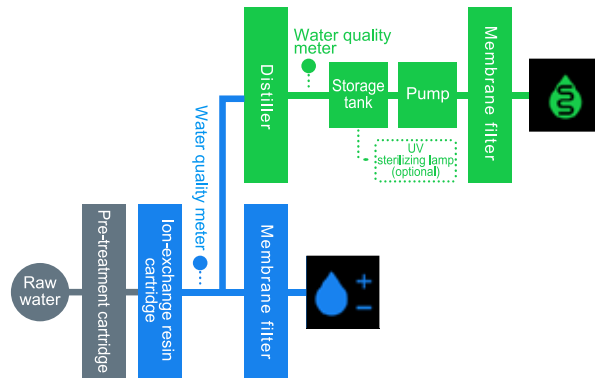
【Main specifications】
 Dimensions : W550×D570×H1715mm (not including protruding parts)
 Weight : Approx. 113kg
 Water quality level : A4 (Ion-exchanged water / Distilled water)
 Distilled water production capacity : 5L/h, Tank capacity 100L

Water Purifier (Auto Still) WG253



【Main specifications】
 Dimensions : W540×D570×H775mm (not including protruding parts)
 Weight : Approx. 63kg
 Water quality level : A4 (Ion-exchanged water / Distilled water)
 Distilled water production capacity : 1.5L/h, Tank capacity 30L

Block Diagram



Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

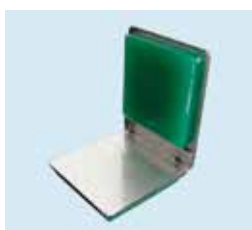
Slim Design for Installation in Limited Spaces

This model offers the same functions as the WG253, but its space-saving design allows installation in limited sink or laboratory bench space. With a 10L tank capacity, it is ideal for environments with low daily water demand.

Size Comparison with WG253

The main unit depth is 570mm, the same as the previous model. Meanwhile, the front width has been reduced by approximately 35%, making installation easier in limited sink and laboratory bench spaces. In addition, an optional anti-tip bracket is available for added safety.

Front Size Comparison with the WG253 Water Purifier



Fall prevention metal fixture with mat (option)



Fall prevention metal fixture (option)

Water Purifier (Auto Still) WGS201



【Main specifications】

Dimensions : W350×D570×H845mm (excluding protruding parts)

Weight : Approx. 54kg

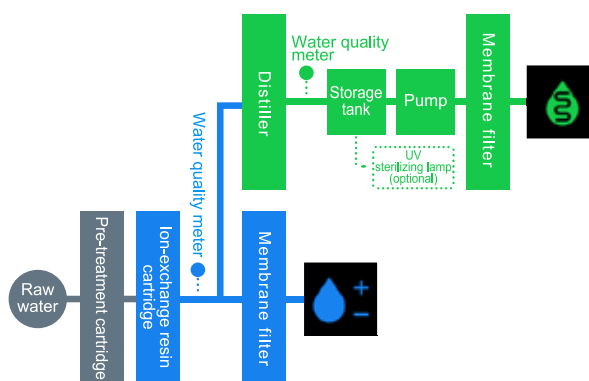
Water quality level : A4 (ion exchanged water/distilled water) distilled water production capacity : 1.5L/h, Tank capacity 10L

Comparison by Daily Distilled Water Usage

If daily usage is low, the space-saving WGS201 is recommended.

Model	Approximate amount of distilled water used (per day)
WGS201	Less than 10L
WGH202, WG253/206	10 to 30L
WG1013	30 to 90L

Block Diagram



- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

Water Purifiers | Entry Class

WG206

Made in Japan

Distillation capacity 1.5L/h | Collection method Ion exchange method → Distillation method | Purified water collection Ion-exchange water/Distilled water | Water quality level A4 (Ion-exchange water)/A4 (Distilled water)

Economical model compliant with JIS K 0557 A4 water-quality standard.



Features

- High-purity water is produced through ion exchange → distillation.
- A pretreatment column (activated carbon + 0.1µm hollow-fiber membrane) removes impurities from feed water, including trihalomethanes, residual chlorine, and other contaminants.
- A high-performance ion exchange resin column (CPC-S, 4L) ensures high-purity water with low conductivity and low TOC levels.

Specifications

Model		WG206
Function	Water quality	Ion exchange water A4 Distilled water A4
	Distilled water production	~1.5L/h
	Distilled water tank capacity	20L
Method / Performance ^{*1}	Water sampling method	Ion exchange water Ion exchange → (Option: Filtration) Distilled water Ion exchange → Distillation →(Option: Filtration)
	Pure water sampling	Ion exchange water / distilled water
	Distilled water production	~1.5L/h
	Distilled water delivery rate ^{*2}	~1.5L/min
	Ion exchange water delivery rate ^{*2}	~1.0L/min
	Setting range of production ^{*3}	Continuous water sampling
Configuration	Condenser	Hard glass
	Heater	Ceramic heater 1.2kW
	Pretreatment cartridge	0.1 µm hollow fiber membrane with activated carbon (PWF-1)
	Ion exchange resin cartridge	CPC-S 4L type, 1 pc. (Activated carbon cartridge)
	Final filtration of distilled & ionized water	Membrane filter (option)
	Leak detection	Forced shutoff of water solenoid valve by leak detection sensor in case of water leakage
	Distilled water storage tank	Polyethylene tank, 20L
	Multi-purpose distilled water sampling port	For connection of Φ8 rigid tube (right side of main unit)
	Water level detection	Float switch, 2-step detection
Standards	Raw water pressure range	0.05~0.5 Mpa
	Amount of raw water required	~2.0 L/min
	Ambient temperature range	5~35°C
	Power supply (50/60Hz) ^{*5}	AC110/115/120/220/230/240V, with step-down transformer
	External dimensions ^{*4}	W540×D575×H775 mm
	Weight	Approx. 55kg
Display / Setting	Water level display	Water level indication of communicating tube
	Water quality display	5-step LED display of conductivity (ion-exchanged water)
	Other Displays	Consumables replacement indicator (ion exchange resin cartridge)
	Accessories	Water supply hose (2m) / Water supply hose filter / Connecting hose assembly / Pretreatment cartridge / Ion exchange resin cartridge / Operation manual

*1 Performance values are for WGH 202, WG253, WGS201, and WG206 : Power supply AC 100V, room temperature 23°C ±5°C, humidity 65% RH±20%. WG1013 : Power supply AC 200V, room temperature 23°C ±5°C, humidity 65% RH ±20%. The ambient temperature range of this product is 5 to 35°C. The raw water temperature range is 5 to 30°C. If the raw water temperature is high, the wastewater temperature may be higher. If the raw water temperature is high, the drainage temperature may be high. If the temperature exceeds 60°C, a drainage trap is required. *2 The guaranteed performance range is 0.2 to 0.5MPa of raw water pressure. The amount of water sampled varies depending on changes in the raw water pressure. *3 The accuracy of the quantitative water sampling is about 10%. *4 Protrusions are not included. *5 Voltage modifications other than the listed specifications are also available. Please contact us for details.

Sterilizers 1

Granulation and Spray Dryers 2

Furnaces 3

Ovens 4

Incubators 5

Plasma Equipment 6

Water Purifiers 7

Baths 8

Water Circulators 9

Rotary Evaporators 10

Stirrers & Shakers 11

Options 12

Standard Model with the Same Water Quality as WG253 and WG1013

Although this model does not include an LCD touch panel or dispenser, it delivers A4-grade pure water (both distilled and ion exchanged), equivalent in quality to the WG253/WG1013.

In addition to warning displays and alarm functions for consumable replacement timing, the unit is equipped with comprehensive safety features for water leaks, water outages, overheating, and more, ensuring safe operation.

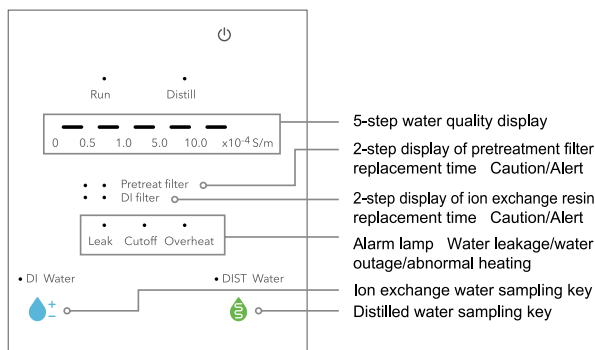
This standard model maintains water quality while minimizing consumable use and overall cost.

Equipped with Automatic Boiler Drainage

During prolonged continuous distillation, non-volatile impurities can concentrate in the boiler, which may affect water quality.

To help maintain stable water quality, the unit automatically drains the boiler every 5 hours.

Controller



For daily operation, simply turn on the power switch and press the ion-exchanged water or distilled water dispensing key. This simple operation lets you obtain A4-grade pure water anytime.

Water Purifier (Auto Still) WG206



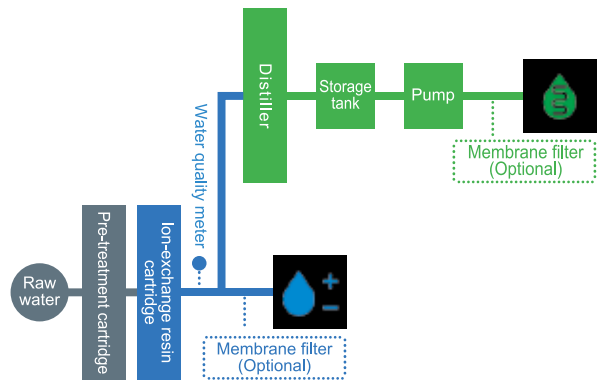
【Main specifications】

Dimensions : W540×D575×H775mm (excluding protruding parts)

Weight : Approx. 55kg

Water quality level : A4 (Ion exchanged water / Distilled water) Distilled water production capacity : 1.5L/h, Tank capacity 20L

Block Diagram



Highest-grade A4 pure water (compliant with JIS K0557).

Water quality analysis results (WG253/1013/WGS201/WG206)

Item	Standard JIS K0557 Standard A4	Measured value											
		WG253			WG1013			WGS201			WG206		
		Ion-exchanged water	Distilled water	Classification	Ion-exchanged water	Distilled water	Classification	Ion-exchanged water	Distilled water	Classification	Ion-exchanged water	Distilled water	Classification
Electrical conductivity (mS/m)	≦0.1	0.0055	0.079	A4	0.0055	0.065	A4	0.0055	0.083	A4	0.0055	0.079	A4
Total organic carbon (TOC) (µg/L)	≦50	11.4	8.4	A4	12.6	8.4	A4	11.8	10.8	A4	11.4	8.4	A4
Zinc (µg/L)	≦0.1	<0.1	<0.1	A4	<0.1	<0.1	A4	<0.1	<0.1	A4	<0.1	<0.1	A4
Silica (µg/L)	≦2.5	<0.1	1.8	A4	<0.1	2.1	A4	<0.1	1.3	A4	<0.1	1.8	A4
Chloride ion (µg/L)	≦1	<0.1	<0.1	A4	<0.1	<0.1	A4	<0.1	<0.1	A4	<0.1	<0.1	A4
Sulfate ion (µg/L)	≦1	<0.1	<0.1	A4	<0.1	<0.1	A4	<0.1	<0.1	A4	<0.1	<0.1	A4
Total water quality level	A4	A4						A4			A4		

*Raw water: Tap water in Tokyo. Values may vary depending on raw water quality and other factors.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Optional Items

Item Name	Product code	Model	WGH 202	WG 253	WG 1013	WGS 201	WG 206	Remarks
Stand	281333	OA097	○	○		○	○	W540×D660×H800mm with caster and adjuster
Water sampling hose unit	281336	OA100					○	Membrane filter, silicone hose 2m, with magnetic hook
Faucet connector for water supply hose	281337	OA101	○	○	○	○	○	Raw water side: G1/2 male or whitworth screw thread W26-20
Water tap	281338	OA102	○	○	○	○	○	Raw water side: G 1/2 male or Rc 1/2 female
Water tap (with pressure reducing valve)	281339	OA103	○	○	○	○	○	Raw water side: G 1/2 male or Rc 1/2 female
Drainage trap	281340	OA104	○	○	○	○	○	Used when drain water temperature is high
Water supply extension hose (1m)	281341	OA105	○	○	○	○	○	1m extension of standard 2m water supply hose
Drainage hose (3m)	281342	OA106	○	○	○	○	○	Remove and exchange the standard 2m hose.
Foot switch	281343	OA107	○	○	○	○		Cord length 5m
Water sampling port cover	281344	OA108	Standard	Standard	Standard	Standard	○	-
Shower nozzle	281345	OA109	○	○	○	○		-
Extension hose for ion exchange resin	281346	OA110		○			○	Hose for CPC-S expansion
Pure water delivery unit	253135	PW200	○	○	○	○	○	Water supply pump for distilled water
Pure line	253669	WL100H	○	○	○	○	○	Connection part for WL100 + WG 205 / 252 / 1012
Filter housing	281347	OA111	○	○	○	○	○	For filters to be installed on the primary side of WL100
Filter stand	281348	OA112	○	○	○	○	○	Self-supporting stand, up to 2 housings can be mounted
External alarm output *	281351	OA113		○				Signal output in the event of notification, alarm, or abnormality (installed when ordered)
External alarm output *	281352	OA114			○			
External alarm output *	281629	OA203				○		Output signals externally in the event of consumable notification, alarm, or abnormality
External alarm output *	281645	OA217	○					
Dispenser extension hose for ion exchange water	281630	OA204	○	○	○	○		Extends the dispenser hose for collecting ion exchange water to approximately 3m outside the machine, reducing the amount of ion exchange water collected to approximately 0.9 L/min
Dispenser extension hose for distilled water	281631	OA205		○	○	○		Extends the dispenser hose for collecting distilled water to approximately 3m outside the equipment, reducing the amount of distilled water collected to approx. 2.2 L/min.
Dispenser extension hose for distilled ultra-pure water *	281644	OA216	○					Extend the dispenser hose for collecting distilled ultrapure water to approximately 3m outside the equipment. Reduction of distilled ultrapure water collected to approx. 2.2 L/min.
Fall prevention metal fixture with mat	281632	OA206	○	○		Standard		Fall prevention L-metal fittings are attached to the side of the equipment and secured with adhesive mats (standard accessory)
Fall prevention metal fixture	281633	OA207					○	Fix the front of the equipment to the top board (front part) of the laboratory bench.
Fall prevention plate (A)	281642	OA214					○	Mounted on the bottom of the equipment and fixed to the sink with adhesive mats. for 600mm depth (Trespa top board)
Fall prevention plate (B)	281643	OA215					○	Mounted on the bottom of the equipment and fixed to the sink with adhesive mats. for 750mm depth (Trespa top board)
Water sampling stand	281637	OA208	○	○	○	○	○	Stand to secure the dispenser at a position away from the equipment. W410×D420×H620mm Weight : approx. 8kg
Water leak detection and water supply shutoff unit	254198	Y-MGB101	○	○	○	○	○	Line sensors wired around the equipment detect leaks and shut off the water supply. Used by attaching a motor valve to the primary side of raw water.
Sterilization lamp *	281626	OA200	Standard	○				Prevents bacterial growth in distilled water tank. Sterilization light built-in set, Mercury-free (Standard equipment)
Sterilization lamp *	281627	OA201			○			Prevents bacterial growth in distilled water tank. Sterilization light built-in set, Mercury-free
Sterilization lamp *	281628	OA202				○		
UV lamp for sterilization lamp (for OA200 / 202)	281636	OA209	○	○		○		Prevents bacterial growth in distilled water tank. Replacement LED Lamp
UV lamp for sterilization lamp (for OA201)	281646	OA218			○			

* Please specify when ordering main unit.



Stand



Water sampling hose unit



Faucet connector for water supply hose



Water tap (with pressure reducing valve)



Drainage trap (example of installation)



Water supply extension hose (1m)



Water supply extension hose (1m)



Foot switch



Water sampling port cover



Shower nozzle



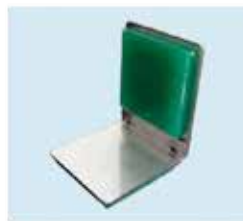
Pure water delivery unit



Pure line



Filter Housing / Stand



Fall prevention metal fixture with mat



Fall prevention metal fixture



Water sampling stand



UV lamp for sterilization lamp

- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers**
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

Consumables

Item Name	Product code	Model	WGH 202	WG 253	WG 1013	WGS 201	WG 206
Membrane filter (set of 2)	9020010004	MFRL727	○	○	○	○	○
Pretreatment cartridge	253099	PWF-1	○	○	○	○	○
Ion exchange resin cartridge	253080	CPC-S	○	○	○	○	○
Air filter	9020020001	AVF-1(4210)					○
Air vent filter	LT00040430	YAVF-1	○	○	○	○	
Pre-filter (wind cartridges)	9020036001	SWPP-010-1	○	○	○	○	○
Activated carbon filter	9020026002	YAC-250	○	○	○	○	○
High-purity cartridge	253259	CPC-H2	○				



Membrane filter



Pretreatment cartridge



Ion exchange resin cartridge



Air vent filter

Water Purifiers | Distilled ultrapure water

WG511/711

Made in
Japan

Distilled water production 5L/h 10L/h

Purified water Deionized water / Distilled water

Water quality A4 Deionized water A4 Distilled water

Large-capacity water purifier that produces high-purity water in a single system.

Feed water, deionized water, and distilled water supply to the storage tank are automatically controlled.

Features

- Produces large volumes of distilled and deionized water.
- Digital water-quality display and touch-button water dispensing.
- Easy replacement of the ion exchange resin cartridge.
- Optional UV lamp for sterilization.



Specifications

Model		WG511	WG711
Water quality ^{*1}	Distilled water	JIS K0557 A4 Standards compliance ^{*2}	
	Deionized water	JIS K0557 A4 Standards compliance ^{*2}	
Treatment process	Distilled water	Pre-treatment cartridge→Ion-exchange cartridge SPC-10→(Option CPC-H)→Distillation→Tank→Filtration	
	Deionized water	Pre-treatment cartridge→Ion-exchange cartridge SPC-10→(Option CPC-H)→Filtration	
Distilled water production ^{*1}		Approx. 5L/hr.	Approx. 10L/hr.
Collection of distilled water ^{*1}		Approx. 1.0 to 2.0L/min. (50Hz) 1.5 to 2.5 L/min. (60Hz) *It depends on the amount of water in the tank.	
Collection of Deionized water ^{*1}		Approx. 1.4L/min.	Approx. 2.8L/min
Setting range of collection capacity		Approx. 0.1 to 85L quantitative water / Continuous water collection ^{*3}	
Drainage connection		Left or right, rear side selective connection, Hose connection	
Pre-treatment cartridge		0.1 μm hollow fiber membrane + activated charcoal (PWF-1) (to be replaced at a flow rate of approx. 5,000 L)	
Ion Exchange Cartridge		SPC-10 (approx. 10L of resin) (Exchange by approx. 2,000L of water flow)	
High-purity cartridge (option)		CPC-H (Exchange by approx. 2,500L of flow rate with together SPC-10)	
Final filtration		0.1 μm membrane filter MFRL730 (Mounted at the sampling outlet) (to be replaced at a flow rate of approx. 3,000L)	
Distilled water storage tank capacity		Polyethylene made, 100L (Full water setting 30/55/85L)	
Distilled water UV sterilization		Optional	
Product water intake tray		Standard	
Raw water pressure range		0.10MPa to 0.50MPa	0.20MPa to 0.50MPa*5
External dimensions ^{*4}		W800×D685×H1510mm	W870×D685×H1510mm
Weight		Approx. 130kg	Approx. 140kg
Power supply (50/60Hz) ^{*6}		AC220/230/240V, with step-down transformer	
Accessories		Water supply hose×1pc, Ion-exchange resin Cartridge (SPC-10)×1pc, Pre-treatment Cartridge×1pc, Membrane Filter×2pcs, Seal tape×1pc, Elbow fitting×1pc, Hose band×2pcs, Connection hose assy×1pc, Drain hose (3m)assy×1pc	

The performance data is based on 200 V AC, room temperature 23°C±5°C, humidity 65%RH±20%.

The operating temperature range of this unit is 5°C to 35°C.

The temperature range of raw water should be between 5°C and 30°C.

The length of the power cord is about 2m outside the unit.

*1 The guaranteed performance range is 2.0 to 5.0×100kPa (2 to 5kgf/cm²) of raw water pressure and water temp. of 20°C.

The amount of water collected varies depending on the temperature of the water.

*2 This is the value immediately after distillation.

*3 The continuous water collection capacity is limited to the amount you select when the tank is full.

*4 Protrusions not included.

*5 When the drainage temperature lowering mechanism is turned off, the water pressure range is 0.10 to 0.50MPa.

*6 Voltage modifications other than the listed specifications are also available. Please contact us for details.

Structure



Water sampling tray
Large stainless steel sink with a splashing preventive mechanism

① Membrane filter MFRL730

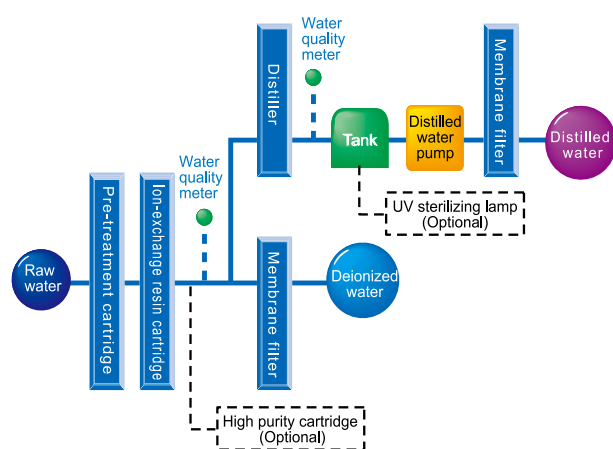
Inner View



Arrangement of consumables

- ② Ion-exchange resin SPC-10
- ③ Pre-treatment cartridge PWF-1
- ④ High purity cartridge CPC-H (Optional)

Treatment Process



Water quality analysis

Japanese Industrial Standard JIS K0557 A4

Item	WG511/711		WG511	WG711
	Deionized water		Distilled water (*Just after production)	
	SPC-10	SPC-10 + CPC-H		
Electrical conductivity(mS/m) (at water temp. 25°C)	0.0056	0.0056	0.084	0.066
Organic carbon (TOC) (µgC/L)	0.02	0.01	0.015	0.014
Zinc (µgZn/L)	<0.1	<0.1	<0.1	<0.1
Silica (µgSiO ₂ /L)	<1.0	<1.0	1.2	2
Chloride Ion (µgCl ⁻ /L)	<0.5	<0.1	<0.2	<0.5
Sulfuric acid Ion (µgSO ₄ ²⁻ /L)	<0.5	<0.1	<0.2	<0.5
Total Level	JIS A4			

Optional items

No.	Description	Option Model	Product Code
①	Product water intake hose unit (1m extension of the sampling port)	OWF10	253208
②	Water Supply Unit	OWH10	253686
③	Pressure reducing valve for raw water	OWG48	253772
④	*Connection Unit G (Connection Set for WL100)		253668
⑤	*Drain trap WG511 (when PVC pipe is used for drainage and the water supply temperature exceeds 30°C)	OWI21	253222
⑥	*Drain trap WG711 (when PVC pipe is used for drainage and the water supply temperature exceeds 28°C)	OWI41	253223
⑦	*UV sterilization lamp	OWG66	253226
⑧	High purity cartridge (CPC-H) connection unit*1	OWG62	253781
⑨	External alarm output	OWG64	253225

*Please specify when ordering main unit. *1 High purity cartridge (CPC-H) is not included.

Consumable parts

No.	Description	Option Model	Product Code
①	Membrane filter (1pc)	MFRL730	9020010006
②	UV sterilization lamp (for optional sterilization lamp)	OWG28	253773
③	Ion-exchange resin cartridge	SPC-10 set	9110010004
④	High-purity cartridge	CPC-H	CPCNS30011
⑤	Pre-treatment cartridge	PWF-1	253099



Water Supply Unit (OWH10)



High Purity Cartridge (CPC-H)



Pre-treatment cartridge (PWF-1)

Water Purifiers | Low-cost, High-volume

WA511/711/731

Made in
Japan

Production capacity	5L/h	10L/h	Treatment process	Distillation→Ionexchange→Filtration	Purified Water	Ion-exchanged water / Distilled water	Water quality	A4 Ion-exchanged water	A1 Distilled water
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High-capacity model for one-touch supply of high-purity water.

The supply of ion-exchanged water and distilled water to the storage tank is automatically controlled.

Features

- Provides large volumes of distilled water and ion-exchanged water. The combined distillation + ion-exchange process helps reduce running costs.
- Using the optional CPC-N ion-exchange cartridge (A3 level) can further lower operating costs.
- Operating status is shown on a digital display, and the language can be selected as Japanese or English.
- The ion-exchange cartridge is easy to replace.
- Safety features include an earth leakage breaker, a water-leak sensor, and a pressure-reducing valve.
- Optional accessories include a water-softener cartridge and a UV sterilization lamp.



Specifications

Model	WA511	WA711	WA731
Water purification method	Pretreatment → Distillation → Ion-exchange → Filtration		
Purified water / Quality level	Distilled water / A1 ^{*1} (JIS K0557), Ion-exchanged water / A4 (JIS K0557)		
Production of distilled water ^{*2}	Approx. 5 L/h	Approx. 10 L/h	
Collection of distilled water	Approx. 1.4 L/min.		
Collection of Ion exchange water	Approx. 1.4 L/min.		
Range of collection capacity	0.1 to 85 L / Continuous water sampling ^{*3}		
Waste water discharging	Drain water connecting on both / back sides for the drain hose		
Boiler	Stainless steel		
Condenser	Stainless steel		
Heater	Pipe heater, 1.9kW×2 pcs.	Pipe heater, 2.55kW×3 pcs.	
Pre-treatment cartridge	Activated carbon + Hollow fiber membrane, 0.1μm (PWF-1)		
Membrane filter	Hollow fiber membrane, 0.1μm (MFRL730)		
High purity cartridge	One-touch connecting type cartridge (Model: CPC-H, 3L)		
Distilled water storage tank	Polyethylene made, 100L (Full water setting 30/55/85L) ^{*3}		
Water sampling table	Large stainless steel sink (With a splashing preventive mechanism)		
Feeding pump	Electromagnetic pump		
Raw water pressure range	0.15MPa~0.50MPa ^{*4}		
Safety function	Power leakage breaker, Water leakage sensor, Water pressure reduction valve, Water quality error alarm		
Power source (50/60Hz) ^{*6}	AC220/230/240V		3-phase AC200V(w/o transformer), AC220/380/415V (with step-down transformer)
External dimensions ^{*5}	W800×D685×H1,510mm	W870×D685×H1,510mm	
Weight	Approx. 130 kg	Approx. 140 kg	
Water quality monitor	Digital indication (Conductivity or Resistivity)		
Distilled water tank level display	Display on LED in 5 steps		
Other indications	Replacement consumable parts (Pretreatment cartridge, High purity cartridge, Membrane filter), Error message, History of error messages, History of consumable part replacements (up to 20 times for each consumable part), Default Language in Japanese or English, Requirement of maintenance		
Accessories	Water supply hose×1pc, Ion-exchange resin Cartridge (CPC-H)×1pc, Pre-treatment Cartridge×1pc, Membrane Filter×2pcs, Seal tape×1pc, Hose band×1pc, Connection hose assy×1pc, Drain hose (3m)assy×1pc		

*1 The measured value is the value immediately after distillation.

*2 Distilled water production volume is based on power supply 200V AC, room temp. 23°C±5°C, humidity 65%RH±20%, raw water pressure 0.2 to 0.5MPa (2 to 5kgf/cm²)

*3 The amount of water that can be sampled continuously is up to the amount selected in the tank full setting.

*4 If the water pressure is 0.10 to 0.15MPa, the drainage temp. may exceed 60°C, so an optional drainage trap (OWI) is recommended.

*5 External dimensions do not include projections. The length of the power cord is about 2m outside the unit.

*6 Voltage modifications other than the listed specifications are also available. Please contact us for details.

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Structure



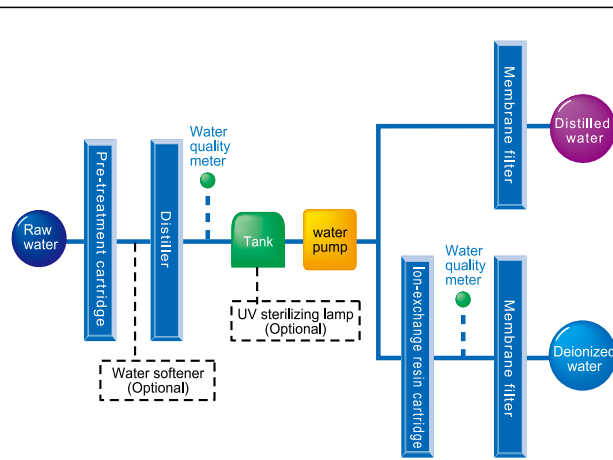
Water sampling tray
Large stainless steel sink with a splashing preventive mechanism

Range of collection capacity: 0.1~85 L
(Continuous sampling)

Control Panel



Treatment Process



Japan Industrial standard JIS K0557 (at water temp. : 20°C)

Item	Ion-exchanged water		Distilled water	
	Measured value	Water level	Measured value	Water level
Electric conductivity(mS/m)	0.0055	A4	0.149	A1
Organic carbon (TOC) (µgC/L)	42	A4	64	A3
Zinc (µgZn/L)	<0.021	A4	0.013	A4
Silica (µgSiO ₂ /L)	<0.1	A4	0.7	A4
Chloride Ion (µgCl ⁻ /L)	<0.1	A4	<0.1	A4
Sulfuric acid Ion (µgSO ₄ ⁻ /L)	<0.1	A4	1	A4
Water Level	A4		A1	

Above measurements vary, depending on the quality of raw water.

Optional Items

No.	Description	Model No.	Main Unit Model No.	Product Code
①	Sampling hose connection unit	OWF10	WA series	253208
②	Water supply unit	OWH10	WA series	253686
③	Raw water pressure reduction valve	OWG48	WA series	253772
④	*Connection unit G (WL100+WA Series)		WA series	253668
⑤	*Drain water trap	OWI21	WA511	253222
⑥	*Drain water trap	OWI41	WA711	253223
⑦	*Drain water trap	OWI51	WA731	253224
⑧	*External alarm terminal	OWA52	WA series	253219
⑨	*UV sterilizing lamp	OWG66	WA series	253226
⑩	*Water softener cartridge unit (with OWA30)	OWA50	WA series	253210
⑪	Ion exchange resin cartridge (A3 water level)	CPC-N	WA series	CPCN30010

*Please specify when ordering main unit.

Consumable items

No.	Description	Model No.	Main Unit Model No.	Product Code
①	Pretreatment cartridge	PWF-1	WA series	253099
②	Membrane filter (1 pc.)	MFRL730	WA series	9020010006
③	High purity cartridge	CPC-H	WA series	CPCNS30011
④	Water softener cartridge for OWA50	OWA30	OWA50	OWA30
⑤	UV lamp for OWG66	OWG28	OWG66	253773



Water Supply Unit (OWH10)



Ion exchange resin cartridge (CPC-N)



High Purity Cartridge (CPC-H)



Pretreatment cartridge (PWF-1)

Water Purifiers | Distilled-water only

WS201/221

Made in Japan

Production capacity 1.6L/h

Treatment process Distillation

Purified Water Distilled water

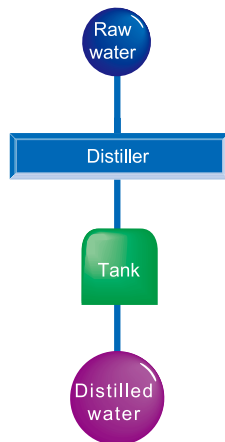
Simple and economical water purifier for distilled water production.

Features

- Compact, space-saving design.
- Splash-prevention design helps prevent impurities from mixing into the distilled water, ensuring stable water quality.
- Equipped with dry-boil prevention and overheat protection functions.
- Suitable for supplying wash water for cleaning tools, glassware, etc.



Treatment Process



Specifications

Model		WS201	WS221
Water purifying method		Distillation	
Purified water		Distilled water	
Distilled water production		Approx. 1.6L/h	
Distilled water delivery rate		Approx. 2.2L/min. (When the tank is full)	
Raw water pressure range		1~3×100kPa (1~3kg/cm ²)	
Safety device		Auto adjustment of cooling water volume Empty boiling / overheat / splash prevention	
Distiller	Boiler	Stainless steel	Hard glass
	Condenser	Hard glass	Hard glass
	Heater	Pipe heater	Built-in quartz glass outer cover
Distilled water storage tank		20L polyethylene tank	
Power supply ^{*2}		AC110/115/120/220/230/240V	
External dimensions ^{*1}		W500×D400×H975mm	
Weight		Approx. 30kg	

- Use water pressure between 1 to 3×100 kPa (1 to 3 kg/cm²).
- *1 External dimensions do not include projections. The length of the power cord is about 2m outside the unit.
- *2 Voltage modifications other than the listed specifications are also available. Please contact us for details.

Optional items

No.	Description	Model No.	Product Code
①	Stand	AS22	253176
②	Water supply unit	OWH10	253686
③	Drain trap	OWI11	253221



Water Supply Unit (OWH10)

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Benchtop Water Purifier - Pure Line® | RO membrane, Longer consumables life

WE200

Made in Japan

Treatment process Ion-exchange

Purified water Deionized water

Water quality Type 1 / A4

Type I (ASTM D1193) / A4 (JIS K0557) benchtop water purifier.

Features

- Suitable for high-sensitivity trace analysis.
- Low running costs.
- The adoption of an RO membrane cartridge set significantly extends consumable life.
- Benchtop, space-saving design.
- Easy water sampling via direct connection to a water faucet.
- User-friendly digital display.
- Displays consumable replacement timing and replacement history.
- Equipped as standard with a membrane filter to protect pure water from contamination.
- A solenoid valve at the sampling port helps prevent leakage.
- Universal power supply: 100–240 VAC.

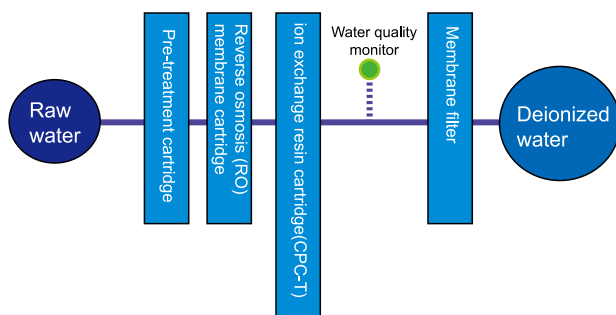


Specifications

Model	WE200
Purified water	Deionized water: compliant with JIS K0557 A4
Water purifying method	RO membrane→ion exchange→filtration
Pure water delivery rate	0.5~1.0L/min continuous production
Raw water filter	Pre-treatment cartridge (activated charcoal + 0.1μm hollow fiber membrane)
Filtration	Reverse osmosis membrane RO
Ion-exchange resin cartridge	2L ion exchange resin containing activated charcoal (CPC-T)
Final filtration	0.1μm membrane filter
Leakage detection	Water supply solenoid valve forcibly shut off when leak is detected
Raw water press range	0.13~0.5MPa (1.3~5.0kgf/cm ²)
Raw water temperature range	10~30°C
Water sampling port	250mm above floor, RC1/4 (connected with membrane filter)
Drainage port	Φ10 rigid tube
Drainage rate	Maximum 2.2L/min.
Safety device	Water cut-off error, water quality sensor error, controller error, pressure limit error, leak error, flow alarm/error, earth leakage
Power supply (50/60Hz)	Single phase AC100~240V 1.3A or less
External dimensions (mm)	W350×D430×H470
Weight	~30kg
Water quality display	7-segment LED display (conductivity / resistivity / water temperature)
Other display	Consumables replacement display (ion exchange resin, pre-treatment cartridge, reverse osmosis (RO) membrane, membrane filter), warning / error display
Included accessories	Supply / drain water hoses, pre-treatment cartridge, reverse osmosis (RO) membrane cartridge set, membrane filter, power cord, seal tape, ion-exchange cartridge CPC-T, drain hose (Φ10×3000mm)

*This unit must be connected to drainage facility.

Treatment Process



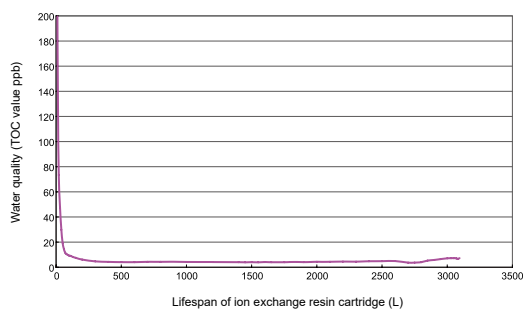
Water Quality Analysis

Item	JIS K0557 Standard A4	Measured value	JIS K0557 level
Electrical conductivity ($\mu\text{S}/\text{cm}$)	≤ 0.1	0.0055	A4
Organic carbon ($\mu\text{g}/\text{l}$)	≤ 0.05	0.005	A4
Zinc ($\mu\text{g Zn}/\text{l}$)	≤ 0.1	<0.1	A4
Silica ($\mu\text{g SiO}_2/\text{l}$)	≤ 2.5	0.5	A4
Chloride ion ($\mu\text{Cl}/\text{l}$)	≤ 1	<0.5	A4
Sulfate ion ($\mu\text{g SO}_4^{2-}/\text{l}$)	≤ 1	<1.0	A4
Total level			A4

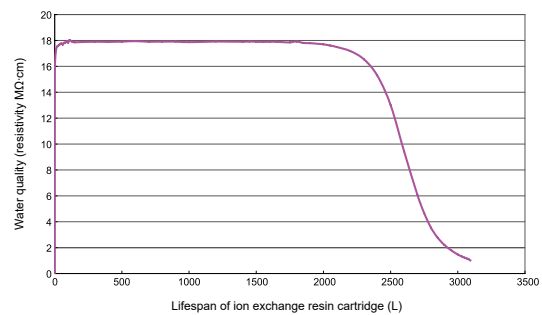
*Quality of raw water may cause different results.

*For water quality comparison JIS K0557 ↔ ASTM D 1193 refer to page 115 of the general catalog.

Ion exchange resin lifespan test (TOC value)



Ion exchange resin lifespan test (Resistivity)



Optional items



Water sampling stand



Foot switch

Product code	Product name
253266	Water sampling stand (supplied in connection kit) OWL40
253278	External alarm output terminal OWE16
253279	Remote water sampling terminal OWE12
253280	Foot switch OWE14
253686	Water supply port unit OWH10

Consumable parts



Pre-treatment cartridge



Reverse osmosis (RO) membrane cartridge set



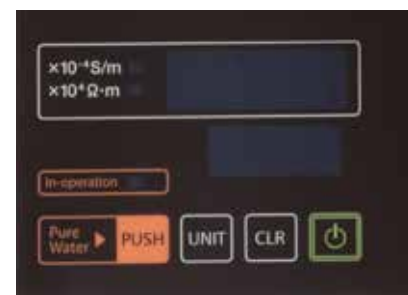
Ion-exchange resin cartridge CPC-T



Membrane filter

Product code	Product name
253099	Pre-treatment cartridge
253257	Reverse osmosis (RO) membrane cartridge set
253256	Ion-exchange resin cartridge CPC-T
9020010004	Membrane filter

Control Panel



Supply / Drain Port (Back of main unit)



- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

Water Purifiers | High purity, Washer-connectable

WL200/220/220T

Made in Japan

Purifying method Ion-exchange

Purified water Deionized water

Specific resistivity 17M Ω .cm or higher

Water quality A3

Economical, space-saving benchtop water purifier with direct tap-water connection.

Features

- Produces deionized water with simple direct connection to a faucet.
- Compact, benchtop, space-saving design.
- User-friendly digital display.
- Deionized water compliant with JIS K 0557 A3, suitable for trace analysis.
- Displays consumable replacement timing.
- Standard membrane filter included (WL200/WL220).
- A solenoid valve at the sampling port helps prevent leakage from the final membrane filter.
- WL220T is suitable for supplying pure water to the built-in water tank of constant temperature/humidity chambers.



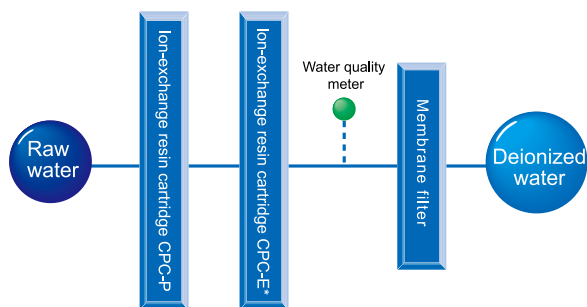
Specifications

Model	WL200	WL220	WL220T
Water purification method	Ion-exchange (Controlled by key)		Ion-exchange (Manual)
Raw water supply	One touch coupler water connection resin hose		
Deionized water production	Approx. 1L/min. (Continuous production)		Approx. 1L/min. (by natural fall)
Ion-exchange resin cartridge	2L ion-exchange resin with activated carbon (CPC-P) × 1pc.	2L ion-exchange resin with activated carbon (CPC-P) × 1pc. 2L ion-exchange resin (CPC-E) × 1pc.	
Final filtration	0.1 μ m (Membrane filter)		-
Pure water tank	-		3L polyethylene tank
Water leakage detection	Solenoid valve forced shutdown of water supply by detecting water leakage		
Raw water pressure range	0.5 to 5×100kPa (0.5 to 5 kgf/cm ²)		
Sampling port	250mm above floor RC1/4 (Membrane filter connection)		Φ9 nipple (Hose connection)
Safety device	Circuit breaker, Water leakage indicator, Pressure reducing valve, Water quality abnormal alarm		
Power supply (50/60Hz)	AC100~240V Single phase, 0.05A to 0.2A		
External dimensions *	W350×D350×H450mm		
Weight	Approx. 14kg	Approx. 16kg	Approx. 17kg
Water quality display	7 segments LED display (Conductivity / Resistivity)		
Other display	Display of consumables replacement (CPC-P and CPC-E: Should be replaced simultaneously to prevent degradation of water quality, Membrane filter), Alarm display (Water leakage alarm)		
Accessories	Raw water supply hose, Power cord (2m), Ion-exchange resin CPC-P (WL200 only), Ion-exchange resin CPC-P+CPC-E (WL220/WL220T), Membrane filter (WL200/220), Y-shaped water supply hose with strainer 4m (WL220T), Constant temperature and humidity chamber connection hose Φ9×Φ13 3m (WL220T), Hook (WL220T), Seal tape		

* Protrusions not included. The length of the power cord is about 2m outside the unit.

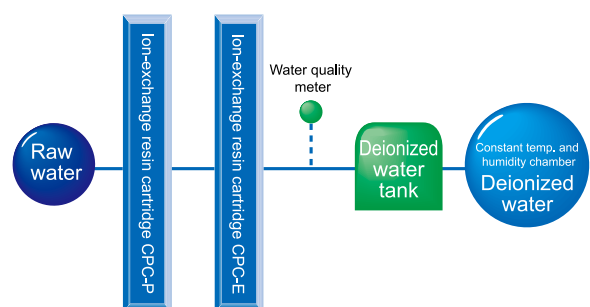
Treatment Process

WL200/220



*CPC-E only for WL220

WL220T



WL220T is a dedicated water purifier for supplying water to a constant temperature and humidity chamber. It does not have a water intake on the front.

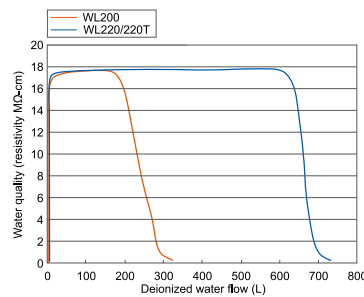
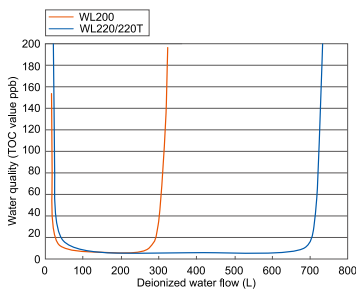
Water Quality Analysis

Japanese Industrial Standard JIS K0557

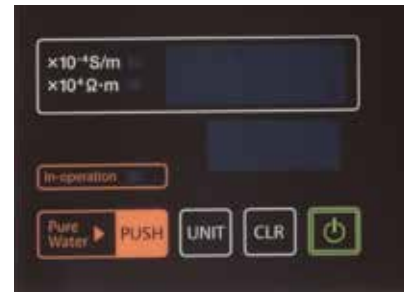
Item	JIS K 0557 A3	WL200		WL220	
		Measured Value	Level JIS K 0557	Measured Value	Level JIS K 0557
Electrical conductivity (mS/m)	<0.1	0.0055	A4	0.0055	A4
Organic carbon(TOC) (µgC/L)	<200	19.6	A4	19.0	A4
Zinc (µgZn/L)	<0.1	<0.1	A4	<0.1	A4
Silica (µg SiO ₂ /l)	<5.0	<3	A3	<3	A3
Chloride ion (µCl ⁻ /l)	<1	<0.5	A4	<0.5	A4
Sulfate ion (µg SO ₄ ²⁻ /l)	<1	<1.0	A4	<1.0	A4
Total level	--		A3		A3

*Quality of raw water may cause different results.

■ Ion exchange resin lifespan test (TOC value) ■ Ion exchange resin lifespan test (resistivity value)



Control Panel



WL220T has no PUSH key and POWER key

Installation example



- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
- Ovens 4
- Incubators 5
- Plasma Equipment 6
- Water Purifiers 7**
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

Structure



WL200



WL220T

Optional Items

No.	Description	Model	Applicable model	Product Code
①	Water supply unit	OWH10	WL200/220/220T	253686
②	Raw water pressure reducing valve	OWG48	WL200/220/220T	253772
③	CPC-E connection set (CPC-E included)	OWL36	WL200	253261
④	*Pre-process cartridge connection set	OWL38	WL200/220	253267
⑤	*Water sampling stand with connection set	OWL40	WL200/220	253266
⑥	*External alarm output terminal	OWL42	WL200/220/220T	253268
⑦	*Remote water sampling function	OWL44	WL200/220	253269
⑧	Remote water sampling function with sampling switch	OWL46	WL200/220	253270
⑨	Input terminal for remote water sampling with solenoid valve	OWL48	WL220T	253272
⑩	Installation tray	OWL50	WL220T	253271
⑪	Power cord (4m)	OWL52	WL200/220	253273

* Please specify when ordering main unit.



Water Supply Unit (OWH10)



Installation tray (OWL50) :
Used when WL220T is placed on top of the constant temperature and humidity unit

Consumable parts

No.	Description	Model	Product Code
①	Ion-exchange resin cartridge	CPC-P	253254
②	Ion-exchange resin cartridge	CPC-P+CPC-E	253262
③	Membrane filter×2pcs.	MFRL727	9020010004



CPC-P
Ion-exchange resin cartridge



CPC-E
Ion-exchange resin cartridge



Membrane filter

Water Purifiers | Simple purifier

WL100

Made in
Japan

Collection type Ion-exchange

Purified water Deionized water

Simple pure water system compatible with filter integration.

Features

- Collects a large volume of deionized water simply by connecting to tap water.
- Built-in voltage-circuit water-quality meter enables easy monitoring of water quality.
- Polyethylene cartridge helps reduce contamination.
- No AC power required, offering economical operation.
- Easy maintenance.

Specifications

Model	WL100
Collection type	Ion exchange type
Purified water	Deionized water
Production amount	Below 2 to 5L/min.
Ion exchanger	Cartridge type (Mixed bed type, Resin amount 10L)
Water quality meter	0 to 10×10 ⁻⁴ S/m (0 to 10μs/cm) (Analog display)
Power (for water quality meter)	Dry cell battery, DC9V
External dimensions *	Φ180×H820mm (Not including coupler and stand)
Weight (at operating)	Approx. 18kg

•Supply water pressure should be 98 to 294kPa (1 to 3kg/cm²).

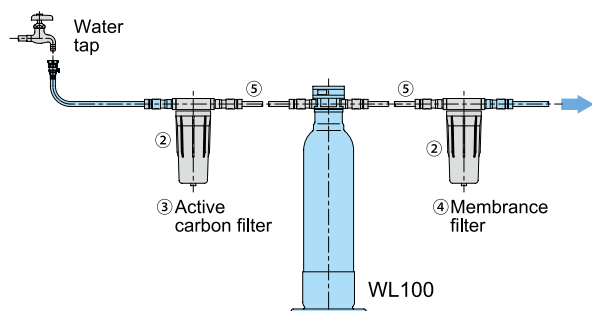
*1 Protrusions not included.

When supplying water to WL100, be sure to open the outlet side of WL100.



This set includes WL100 + ①Filter stand + ②Filter housing unit (×2sets) + ③Active carbon filter + ④Membrane filter + ⑤Connection unit B

System Example



Possible to eliminate the other particles of inorganic ion

Optional items

No.	Description	Product Code
①	Filter stand	253676
②	Filter housing unit	253675
③	Activated carbon filter	9020026002
④	Membrane filter	9020010007
⑤	Connection unit B	253678
⑥	Connection unit G	253668
⑦	Ion exchange, IE cylinder	000821
⑧	Ion exchange resin only (w/o cylinder)	9110010001

Contents

Constant High Temp. Water Baths	150
Constant Low Temp. Water Baths	151
Water Baths	155
Oil Baths	156

Constant High Temp. Water Baths | Standard Type

BK310C/410C/510C/610C/710C, BA310C/410C/510C/610C/710C

Temp. control range RT+5~80°C

Internal capacity 27L 42L 70L 109L 144L

Easy to use, with a observation window to confirm sample status, the constant high temperature water baths range from 27L to 144L in volume.



BK Series: Fixed temp. operation

BA Series: Program Operation

Features

- Feature both BK fixed temp. operation and BA program operation.
- Achieve very high temperature adjustment precision through high-precision temperature regulation methods and efficient circulation pumps stirring inside the bath.
- Temperature and time settings and indicators are all digitally displayed; quick auto-stop, auto-stop, and auto-start functions can be realized.

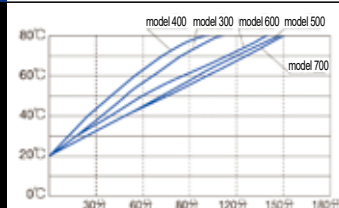
Safety

- Equipped with self-diagnostic circuit (temperature sensor abnormality, heater disconnection, automatic overheating prevention, SSR short circuit), an independent overheating alarm, and safety functions such as leakage protection switches that prevent overcurrent and key lock.

Specifications

Model	BK/BA310C	BK/BA410C	BK/BA510C	BK/BA610C	BK/BA710C	
System	High efficiency circulation pump stirring					
Performance	Operating temp. range	RT+5~80°C				
	Temp. adjusting accuracy	±0.02~±0.07°C				
	Temp. distribution accuracy	±0.3°C				
	Max. temp. reaching time	Approx. 120 min	Approx. 110 min	Approx. 165 min	Approx. 160 min	Approx. 200 min
Composition	Internal chamber	Stainless steel plate and glass				
	Temp. regulator	Computer PID control (BK: fixed temp. Type, BA: fixed temp. type and program type)				
	Sensors	W sensor: Platinum resistance thermometer Pt100Q (temperature regulator) + K thermocouple (overheating preventer)				
	Temp. setting method	Digital Setting				
	Temp. display method	Digital display				
	Overheating preventer and setting method	Computer ON-OFF control Digital Setting				
	Heater (SUS316 L)	1.3kW	2.2kW	2.4kW	3.5kW	4.5kW
	Stirring pump	6w	30w	60w		
	Timer	1 min~99 h 59 min~999 h 59 min digital setting auto start, auto stop, quick auto stop				
	Program function (BA type)	1 mode 30 steps, 2 mode 15 steps, 3 mode 10 steps				
Safety device	Self-diagnostic functions: Temperature sensor malfunction, heater malfunction, display malfunction, SSR short circuit, automatic overheat protection malfunction, measured temperature malfunction; Safety devices: Residual current circuit breaker, overheat protector (electronic type integrated with controller)					
Specifications	External dimensions (W×D×H mm)	490×360×367	590×410×367	690×460×417	738×560×467	830×560×517
	Water bath dimensions (W×D×H mm)	300×300×300	400×350×300	500×400×350	548×500×400	640×500×450
	Material	Tempered glass×2				
	Observation window dimensions (Width×height mm)	240×215	340×215	440×265	340×215	440×265
	Internal bath capacity	Approx. 27L	Approx. 42L	Approx. 70L	Approx. 109L	Approx. 144L
	Shelf sections	5		6	9	10
	Drainage pipe	φ 15×20mm				
	Power supply (50/60Hz)	AC220V				
	Rated current	6A	10.5A	11.5A	16.5A	22A
	Weight	Approx. 19kg	Approx. 25kg	Approx. 30kg	Approx. 36kg	Approx. 46kg
Accessories	1 shelf, 2 clamping devices, 1 support column, 2 clamping device brackets, instruction manual					
Options	Container installation bracket, viscosity meter bracket, external circulation pump, cooling pipe, water bath lid, external communication function (RS485)					

Data (Temperature rise curve)



Control panel



BK type

BA type

Water bath lid



1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Constant Low Temp. Water Baths | Large Capacity

BL410C/810C

Temp. control range -15~70°C

Temp. distribution accuracy ±0.3°C

Internal capacity 36L 80L

Large capacity constant low temperature water baths with observation window.



Features

- Wide operating temperature range: -15~70°C.
- Automatic stop operation and automatic start operation are both achievable. RS485 communication function and temperature output terminal (4~20mA) are also Standard equipment.
- Set a large observation window.
BL410C: width 250×height 135 mm
BL810C: width 450×height 135 mm
- Shelf height can be adjusted in segments.

Safety

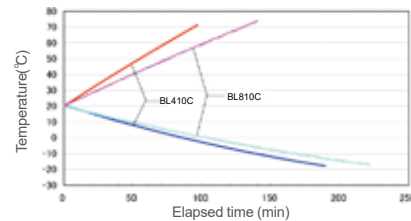
- Self-diagnosis function, leakage circuit breaker to prevent overcurrent, pressure detection for the refrigeration unit, anti-dry heating float switch, overload protection relay for the refrigeration unit, delay function for refrigeration unit protection.

Control panel

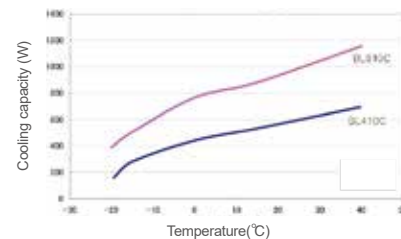


BL410C/BL810C

Heating/cooling · cooling capacity curve



Cooling Capacity Curve



Specifications

Model		BL410C	BL810C
System		Pump circulated cooling	
Performance	Operating temp. range	-15~70°C	
	Temp. adjusting accuracy	±0.1°C	
	Temp. distribution accuracy	±0.3°C	
	Temp. unit	0.1°C	
	Cooling capacity	Approx. 540W (464Kcal/h), at liquid temp. 15°C	Approx. 920W (791Kcal/h), at liquid temp. 15°C
Composition	Temp. control	PID control	
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop	
	Temp. sensor	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple	
	Temp. setting, display	Digital setting, digital display	
	Refrigerator, refrigerant	Air cooling	
		350W, R404A	600W, R404A
	Stirring method	Jet stirring is realized by magnetic pump	
	Heater	1.3kW	2kW
	Operating ambient temp. range	5~30°C	
	Safety device	Self-diagnosis function, overload protection relay for the refrigeration unit, pressure detection for the refrigeration unit, anti-dry heating float switch, delay function for refrigeration unit protection, key lock function, automatic overheating protection function, leakage protection switches for over-current, overheating protector	
Other functions	Water valve, condenser filter, RS485 communication function, temperature output terminal (4~20mA), refrigeration unit pressure indicator, deviation correction function, power failure compensation function		
Specifications	Water bath dimensions	400×300×300	600×400×350
	Internal bath capacity	36L	80L
	Shelf layer quantity and spacing	2 layers, adjustable 30mm spacing	
	External dimensions (W×D×H mm)	680×390×805	880×490×855
	Power supply (50/60Hz)	AC220V 8.5A	AC220V 14A
Weight	Approx. 57kg	Approx. 85kg	
Accessories	Bottom shelf, variable mid-shelf		

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
Plasma Equipment	6
Water Purifiers	7
Baths	8
Water Circulators	9
Rotary Evaporators	10
Stirrers & Shakers	11
Options	12

Constant Low Temp. Water Baths | Standard

BB311C/411C/611C

Temp. control range -30~80°C

Temp. distribution accuracy ±0.3°C

Internal capacity 6L 13L 26L

Constant low temperature water baths that can adjust from -30~80°C with an accuracy of ±0.1°C.

Features

- Capable of achieving temperature adjustment precision of ±0.1°C.
- Extend the use of the water bath itself while ensuring effective space inside the bath.
- Equipped with external circulation function.
- Switching between internal and external circulation can be easily achieved with a simple operation of the water valve.
- Shelf height can be adjusted in 3 segments, allowing even small containers to be used.
- Primarily operates with automatic stop and automatic start functions, with RS485 communication function, temperature output terminal (4~20mA) as standard features.

Safety

- Self-diagnostic function, leakage circuit breaker to prevent overcurrent, pressure detection for the refrigeration unit, anti-dry heating float switch, overload protection relay for the refrigeration unit, delayed function for refrigeration unit protection.



Specifications

Model		BB311C	BB411C	BB611C	
Performance	Operating temp. range	-30~80°C			
	Temp. adjusting accuracy	±0.1°C			
	Temp. distribution accuracy	±0.3°C			
	Temp. unit	0.1°C			
Cooling capacity		Approx. 420W (361Kcal/h), at liquid temp. 15°C	Approx. 510W (439Kcal/h), at liquid temp. 15°C	Approx. 730W (628Kcal/h), at liquid temp. 15°C	
Composition	Temp. control	PID control			
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop			
	Temp. sensor	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple			
	Temp. setting, display	Digital setting, digital display			
	Refrigerator, refrigerant		Air cooling		
			300W, R404A	350W, R404A	600W, R404A
	Device circulation capacity (50/60Hz)	Max. flow rate	2.8/3.2L/min (jet stirring)		
		Max. lift head	1.1/1.4m		
	Heater		Stainless steel heating pipe		
			850W		1.2kW
Cooling pipe		Nickel-plated copper			
External circulation port		Both the outlet and return ports have an outer diameter of 10.5mm			
Operating ambient temp. range		5~30°C			
Safety device		Self-diagnosis function, overload protection relay for the refrigeration unit, pressure detection for the refrigeration unit, anti-dry heating float switch, delay function for refrigeration unit protection, key lock function, automatic overheating protection function, leakage protection switches for over-current, overheating protector			
Other functions		Water valve, condenser filter, RS485 communication function, temperature output terminal (4~20mA), refrigeration unit pressure indicator, deviation correction function, power failure compensation function			
Specification	Water bath dimensions (W×D×H mm)	150×300×170	250×315×190	330×435×200	
	Effective water bath dimensions (W×D×H mm)	120×140×140	220×150×160	300×285×170	
	Internal bath capacity	6L	13L	26L	
	External dimensions (W×D×H mm)	395×523×880	420×550×880	440×650×880	
	Power supply (50/60Hz)	AC220V 7A		AC220V 10A	
	Weight	Approx. 46kg	Approx. 53kg	Approx. 70kg	
Accessories		Top cover, drainage pipe, overflow pipe, shelf			

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

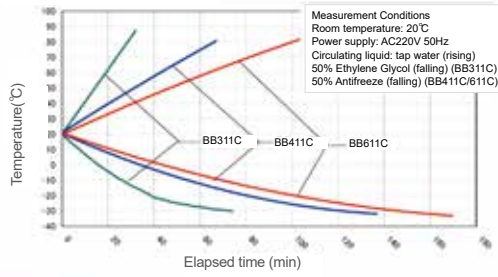
10 Rotary Evaporators

11 Stirrers & Shakers

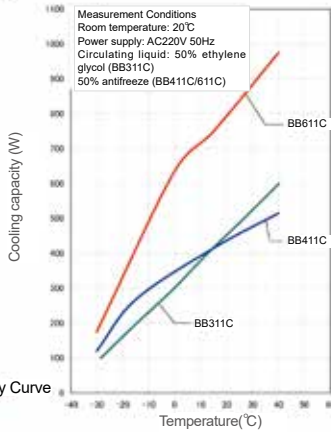
12 Options

Heating/Cooling · Cooling Capacity Curve · Flow/Head Curve

Heating Cooling Curve

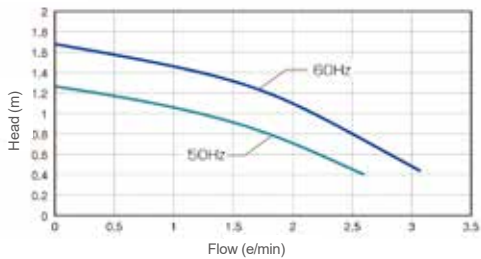


Cooling Capacity Curve



Cooling Capacity Curve

Flow/Head Curve



Control panel



Back side



- Due to the setting of a shut-off valve on the discharge side, external circulation can be switched quickly with a quick-connection. The nozzle diameter is $\Phi 10.5\text{mm}$.
- RS485 external communication
- Temperature output terminal

Usage cases



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Constant Low Temp. Water Baths | Benchtop Type

BBL111C/311C

Temp. control range -10~80°C

Temp. distribution accuracy ±0.3°C

Internal capacity 8L 13L

Benchtop constant low temperature water baths that ensure a wide temperature range and ample water bath space.

Features

- Achieves precise temperature control with an adjustment accuracy of $\pm 0.1^\circ\text{C}$.
- Expands the usability of the water bath itself and fully guarantees effective space within the bath.
- Equipped with an external circulation function.
- Switching between internal and external circulation can be easily achieved by operating the water valve.
- Shelf height can be adjusted in 2 segments, allowing for the use of small containers.
- Features automatic stop operation, automatic start operation, RS485 communication function, and temperature output terminal (4~20mA) as standard.

Safety

- Self-diagnosis function, leakage circuit breaker to prevent overcurrent, pressure detection for the refrigeration unit, anti-dry heating float switch, overload protection relay for the refrigeration unit, delay function for refrigeration unit protection.

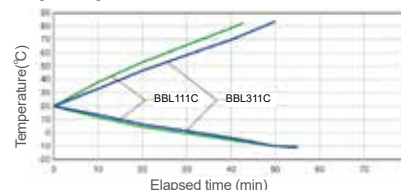


Specifications

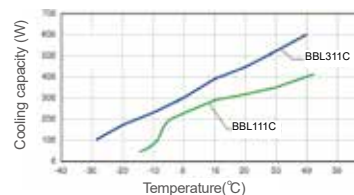
Model		BBL111C	BBL311C	
System		Pump-circulated cooling/External closed-loop circulation		
Performance	Operating temp. range	-10~80°C		
	Temp. adjusting accuracy	$\pm 0.1^\circ\text{C}$		
	Temp. distribution accuracy	$\pm 0.3^\circ\text{C}$		
	Temp. unit	0.1°C		
	Cooling capacity	Approx. 300W (260Kcal/h), at liquid temp. 15°C	Approx. 410W (350Kcal/h), at liquid temp. 15°C	
Composition	Temp. control	PID control		
	Operation functions	Fixed temp. operation, auto start, quick auto stop, auto stop		
	Temp. sensor	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple		
	Temp. setting, display	Digital setting, digital display		
	Refrigerator, refrigerant	Air cooling		
		160W, R134A	350W, R404A	
	Stirring method	Magnetic pump		
	Device circulation capacity (50/60Hz)	Max. flow rate	3.7/4.7L/min	
		Max. lift head	1/1.5m	
	Heater	700W	900W	
Cooling pipe	Nickel-plated copper			
External circulation port	Both the outlet and return ports have an outer diameter of 11mm			
Operating ambient temp. range	5~30°C			
Safety device	Self-diagnosis function, overload protection relay for the refrigeration unit, pressure detection for the refrigeration unit, anti-dry heating float switch, delay function for refrigeration unit protection, key lock function, automatic overheating protection function, leakage protection switch for over-current, overheating protector			
Other functions	Water valve, condenser filter, RS485 communication function, temperature output terminal (4~20mA), refrigeration unit pressure indicator, deviation correction function, power failure compensation function			
Specifications	Water bath dimensions (W×D×H mm)	300×150×177.5	300×240×177.5	
	Effective water bath dimensions (W×D×H mm)	238×100×85	238×190×85	
	Internal bath capacity (effective capacity)	8L (6.75L)	13L (11.5L)	
	External dimensions (W×D×H mm)	500×530×500	500×600×500	
	Power supply (50/60Hz)	AC220V 5A	AC220V 6A	
Weight	Approx. 35kg	Approx. 55kg		
Accessories	Shelves, top cover, drainage pipe, overflow pipe			

Heating/cooling · cooling capacity curve

Heating Cooling Curve

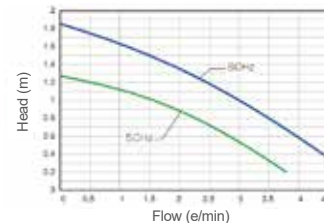


Cooling Capacity Curve



Flow/head curve

Flow/Head Curve



1 Sterilizers

2 Granulation and Spray Dryers

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4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

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11 Stirrers & Shakers

12 Options

Water Baths | Economy Type

BM302-E/312-D

Made in Japan

Temp. control range RT+ +10~90°C

Large 5 L bath with an internal diameter of $\Phi 240$ mm.

Features

- The flat design, with no heater or sensor inside the bath, makes cleaning easy.
- Equipped with comprehensive safety features, including automatic overheat protection, an upper temperature limit, and independent overheat protection.



Specifications

	BM302-E	BM312-D
Operating temp. range	Room temp. +10 to 90°C	
Temp. adjustment accuracy	±1.0°C	
Temp. control system	PID control by microprocessor	
Temp. setting/display method	White LED digital display, key entry, minimum digit of 1°C	
Heater	1kW	
Safety device	Automatic overheat prevention, independent overheat prevention (fixed temp.)	
Additional function	Overshoot alert, auto-resume(selectable), Calibration offset	
External dimensions ($\Phi \times H$ mm)	$\Phi 262 \times 240$ mm	
Remarks (dimensions)	Bath internal capacity : Approx. 5L	
Power supply *	AC100 to 115V 10 to 12A (50/60Hz) Service outlet 2A excluded	AC200 to 230V 5 to 6A (50/60Hz) Service outlet for RE212 : None
Weight	4.5kg	

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

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Oil Baths | Economy Type

BO302-E/312-D

Made in
Japan

Temp. control range RT+ +10~180°C

Large-capacity 5 L bath (for water or oil) with an internal diameter of $\Phi 240$ mm.

Features

- The flat design, with no heater or sensor inside the bath, makes cleaning easy.
- Equipped with comprehensive safety features, including automatic overheat protection, an upper temperature limit, and independent overheat protection.



Specifications

	BO302-E	BO312-D
Operating temp. range	Room temp. +10 to 180°C	
Temp. control accuracy	±2°C	
Temp. control system	PID control	
Temp. setting/display method	White LED digital display, key entry, minimum digit of 1°C	
Heater	1kW	
Sensors	Pt 100 ohm	
Safety device	Automatic overheat prevention, Independent overheat prevention (fixed temp.)	
Additional function	Overshoot alert, Auto resume (selectable), Calibration off-set	
External dimensions ($\Phi \times H$ mm)	$\Phi 262 \times 240$ mm	
Remarks (dimensions)	Bath internal capacity : Approx.5L	
Power supply *	AC100 to 115V 10 to 12A (50/60Hz) Service outlet 2A excluded	AC200 to 230V 5 to 6A (50/60Hz) Service outlet for RE212 : None
Weight	4.5kg	

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

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3 Furnaces

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5 Incubators

6 Plasma Equipment

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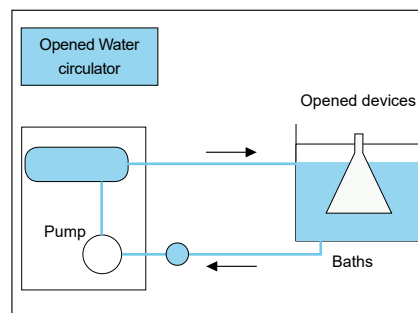
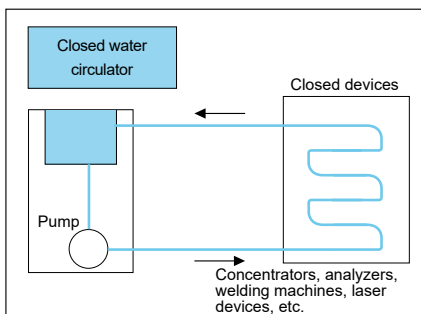
11 Stirrers & Shakers

12 Options

Water Circulators

Contents

Closed Water Circulators	159
Opened Water Circulators	163



Constant temperature water circulators with a powerful product lineup

Widely used in the fields from biochemistry to semiconductors, with models for energy-saving, high power, low bed, benchtop, space-saving, with solvent recovery, and with external linkage, the product variety is extensive.

Function · Safety Device

Auto overhear prevention function

Built-in overhear prevention function of controller, usually when constant temp. oven or drying oven chamber temp. reaches set temp. + 12°C, and constant temp. bath temp. reaches set temp. + 6°C, the heater cuts off the function of (auto recovery).

Overheat protector

Controller all-in-one type overheat protector is used in common by power source and controller, but other circuits are standalone. If overheat abnormally, cut off (manual recovery) heater circuit.

Standalone overhear protector

Different circuit from controller, if overheat abnormally, cut off (manual recovery) heater circuit. According to different models, respectively carry digital, liquid-expansion, bimetallic type, etc.

Self-diagnosis function

By means of the microcomputer carried in controller, detect the abnormality of circuit, the alarm sounds if abnormal and control the device within safety range.

Key lock function

Prevent the misoperation during operation.

Backup function

Even in power outage or cut off power source, the set value can be memorized.

Power outage compensation

When the power recovers, it's able to select to stop or continue operation.

Overcurrent breaker

When abnormal current passes, cut off the power to protect the unit.

Overcurrent electric leakage breaker

The breaker has both overcurrent cut-off function and electric leakage cut-off function.

Emergency stop button

To stop in an emergency, press the emergency stop button to cut off power.

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Cooling Water Circulators | External Closed System, Standard Type

CF303-Y, CF313-X, CF313-Y, CF812-D

Operating temp. range -20°C~30°C

Cooling capacity CF303-Y, CF313-X/Y: Approx. 450W (at 10°C)

CF812-D: Approx. 1230W (at 10°C)

High-capacity, water-saving closed-loop recirculating chiller.



Provides a stable supply of cooling water to the closed-loop cooling sections of research, analytical, and industrial equipment via a refrigeration unit and circulation pump.

Features

- Uses environmentally friendly refrigerants R452A / R407C.
- Waterproof operation panel with a simple, easy-to-read digital setting display.
- CF812-D can supply cooling water to two rotary evaporators (basic configuration).
- Equipped with safety features such as an earth leakage circuit breaker (ELCB) with over-current protection, an overload protection relay for the refrigeration unit, pump overheat protection, and a refrigeration start-delay timer.

New Control Unit



A high-brightness white LED display improves visibility and operability. The display can be switched between the measured temperature and the set temperature.

Specifications

Model		CF303-Y	CF313-X	CF313-Y	CF812-D	
System		External closed circulation by circulation pump				
Performance	Operating temp. range	-20°C~30°C				
	Temp. adjusting accuracy	±1.0°C (≥0°C), ±1.5°C (<0°C)			±1.0°C	
	Cooling capacity	Approx. 450W at liquid temp. 10°C		Approx. 1230W at liquid temp. 10°C		
Composition	Cooling capacity		Approx. 330W at liquid temp. -10°C		Approx. 700W at liquid temp. -10°C	
	Temp. control		Refrigeration Unit ON-OFF Control			
	Temp. sensor		Pt100Ω			
	Temp. setting, display		White LED digital display, key input			
	Refrigerator, refrigerant		Air cooling 450W, R452A		650W, R407C	
	Circulation pump		Magnetic pump			
			15W		20W	75/100W
	Device Circulation Capacity	Max. flow rate	10L/min	9L/min	10L/min	Approx. 12L/min (50Hz) Approx. 14L/min (60Hz)
		Max. lift head	Approx. 5.7m	Approx. 4.3m	Approx. 5.7m	Approx. 10.3m (50Hz) Approx. 14.3m (60Hz)
	Cooling pipe		Stainless Steel SUS304		Stainless Steel SUS304	
	External circulation port		Snap-on connector, O.D. 10mm rigid pipe connection (with attached connectors, can connect to I.D. 9mm soft hose)			
	Operating ambient temp. range		5~35°C			
Safety device		Overcurrent leakage protection switch, refrigeration unit overload relay, pump overheating protector, refrigeration unit protection time-delay timer, temperature sensor abnormality, high/low temperature limit warning, fan protection				
Other functions		Circulation port condensation water drainage pipe, suction port dust filter, cooling operation switch, circulation pump switch, deviation correction, power outage reset mode selection function				
Specifications	Water bath material		Stainless steel			
	Water bath capacity		Approx. 3.9L (liquid volume 3.5L)		Approx. 15.5L (liquid volume 14L)	
	Power supply *		AC115V 6.6A 60Hz	AC220V 3.8A 50Hz	AC220V 4.0A 60Hz	AC220V 6.0A 50/60Hz
	External dimensions (W×D×H mm) (including protrusions)		205×396×535 225×434×564 (Protruding Dimensions)		340×370×838 340×408×920 (Protruding Dimensions)	
Weight		Approx. 30kg		Approx. 43kg		
Accessories		1 condensation water drainage hose (1m), 2 hose clamps for fixing hoses, 2 hose nozzles (for soft hose connections), and 1 instruction manual.				

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

Easy Connection of Circulation Pipes



Connection is simple—just insert rigid tubing (O.D. 10 mm). The rotating connector allows the tubing/hose direction to be adjusted freely without twisting the hose. Soft tubing (I.D. 9 mm) can also be connected using the supplied hose connector.

Condensate Drain



A condensate drain port is located near the top connectors. Attach the supplied drain hose to discharge condensate water.

Easy-to-clean filter



The front filter cover is secured with magnets, making it easy to remove for cleaning. The filter is a replaceable sheet type, allowing quick replacement and easy maintenance.

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Cooling Water Circulators | External Closed Loop, Low Bed Type

CF720C

Operating temp. range -20°C~RT

Cooling capacity Approx. 880W (at 10°C)

Low bed type external closed cooling water circulator, can be installed under the fume hood or laboratory bench.

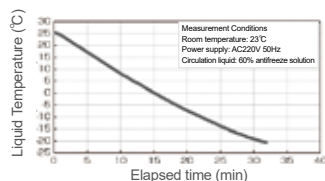
Cooling water is steadily supplied to the closed cooling parts of research instruments, analytical and measuring instruments, industrial equipment, etc., through refrigeration unit and circulation pump.

Equipped with two circulation systems, 880W cooling capacity, capable of simultaneously cooling 2 sets of rotary evaporators (basic model).

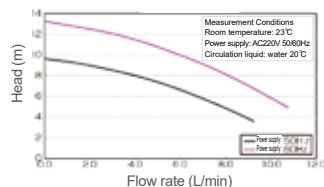
Features

- Use environmentally friendly refrigerant R404A.
- The operating part is digital setting and display, with a timing function.
- The circulation water flow adjustment valve, drainage valve, overflow port, and power switch are all installed on the front of the body, allowing all operations are in front of the unit body.
- Equipped with safety designs such as overcurrent leakage protection switch, refrigeration unit overload relay, pump overheating protector, and a time delay timer for refrigeration unit protection.

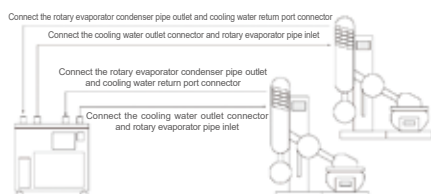
Cooling curve



Flow/head curve



System configuration example.



Specifications

Model		CF720C	
System		External closed circulation by circulation pump	
Performance	Operating temp. range	-20°C~room temperature	
	Temp. adjusting accuracy	±2°C	
	Cooling capacity	Approx. 880W at liquid temp. 10°C Approx. 680W at liquid temp. 0°C Approx. 470W at liquid temp. -10°C	
Composition	Temp. control	Refrigeration Unit ON-OFF Control	
	Temp. sensor	T-type thermocouple	
	Temp. setting, display	Digital setting, digital display	
	Refrigerator, refrigerant	Air-cooled sealed rotary type 600W R404A 680g	
	Circulation pump	Magnetic pump 127W	
	Pump capacity (50Hz)	Max. flow rate	30L/min
		Max. lift head	10.3m
	Device circulation capacity (50Hz)	Max. flow rate	16.9L/min
		Max. lift head	9.7m
	Cooling pipe	Nickel-plated copper	
External circulation port	Outer diameter 10.5mm pipe connector (2 each for inlet and outlet, with water valves)		
Operating ambient temp. range	5~35°C		
Safety device	Overcurrent leakage protection switch, refrigeration unit overload relay, pump overheating protector, refrigeration unit protection time delay timer, bypass for pump protection		
Other functions	drainage, overflow, condenser filter, key lock function, deviation correction function, power outage compensation function, temperature output terminal		
Specifications	Water bath material	SUS304	
	Water bath capacity	Approx. 11.5L (liquid volume 10.5L)	
	Power supply (50Hz)	AC220V 5A	
	External dimensions (W×D×H mm)	465×435×600	
	Weight	Approx. 60kg	
Accessories	Top cover, 4×1.5m circulation hoses, 4 clamps, 1 drainage hose, 1 overflow hose		

1 Sterilizers

2 Granulation and Spray Dryers

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Precision Constant Temp. Water Circulators | External Closed Loop, High Precision Temp. Control

CFA311C/610C

Operating temp. range -10°C~80°C

Temp. adjusting accuracy ±0.1°C

Precision type, external closed water circulator with a temperature adjusting accuracy of ±0.1°C.

Features

- Provide high-precision circulating water with an operating temperature range of -10~80°C, and a temperature adjustment precision of ±0.1°C.
- As a cooling device, it has a strong cooling capacity.
- Monitors low water level, refrigeration unit pressure anomalies, refrigeration unit operation, and circulation pump operation, allowing real-time monitoring of the device's operating status.
- Equipped with various functions such as automatic stop operation, automatic start operation, temperature output terminal, deviation correction function, and RS485 external communication function.

Safety

- Feature various protection devices such as overcurrent leakage protection switch, self-diagnosis function, key lock function, refrigeration unit overload protector, refrigeration unit protection time delay timer, refrigeration unit pressure detection, float switch for preventing pump dry running, bypass for circulation pump protection, automatic overheating protection function, and overheating protector.



Specifications

Model		CFA311C	CFA610C	
System		External closed circulation by circulation pump		
Performance	Operating temp. range	-10~80°C		
	Temp. adjusting accuracy	±0.1°C		
	Temp. unit	0.1°C		
	Cooling capacity	Approx. 550W, at liquid temperature 10°C	Approx. 700W, at liquid temperature 10°C	
Composition	Temp. control	PID control		
	Temp. sensor	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple		
	Temp. setting, display	Digital setting, digital display		
	Refrigerator, refrigerant	Air cooling		
		300W, R404A	675W, R404A	
	Circulation pump	Magnetic pump		
		45W	65W	
	Device circulation capacity (50Hz)	Max. flow rate	15L/min	22L/min
		Max. lift head	8.0m	10.0m
	Heater	Stainless steel heating tube 1.0kW	Stainless steel heating tube 2.5kW	
	Cooling pipe	Nickel-plated copper		
External circulation port	Rc3/8 (CFA301 Standard equipment pagoda joint)			
Operating ambient temp. range	5~35°C			
Safety device	Self-diagnosis function, overcurrent leakage protection switch, refrigeration unit overload protector, refrigeration unit pressure detection, refrigeration unit protection time delay timer, float switch for preventing pump dry running, bypass for circulation pump protection, automatic overheating protection function, overheating protector			
Other functions	Drain valve, condenser filter, RS485 external communication function, refrigeration unit pressure indicator, key lock function, deviation correction function, temperature output terminal (4-20mA)			
Specifications	Water bath dimensions	Dimensions: width 250×depth 315×height 180mm	Inner diameter 300×height 236mm	
	Water bath material	SUS304		
	Water bath capacity	Approx. 13L	Approx. 16L	
	Power supply (50Hz)	AC220V 8A	AC220V 17A	
	External dimensions (W×D×H mm)	380×565×720	420×565×1050	
Weight	Approx. 60kg	Approx. 77kg		
Accessories	Drainage pipe, overflow pipe			

Internal water bath (CFA610C)



Control panel



Water level monitoring, refrigeration unit monitoring, refrigeration unit action indicator

Back (CFA311C)



- RS485 external communication terminal
- Temperature output terminal
- circulation port

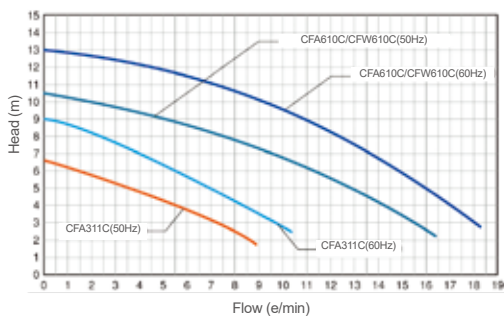
Back (CFA610C)



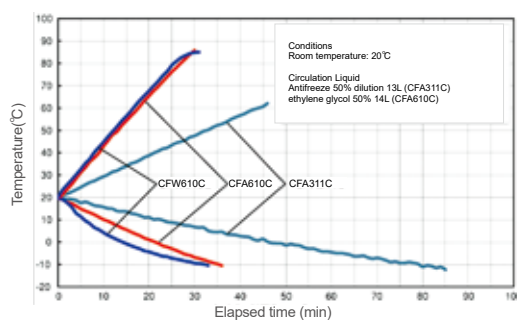
- RS485 external communication terminal
- Temperature output terminal
- circulation port

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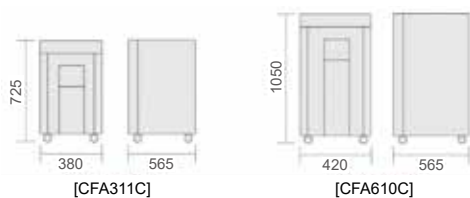
Flow/Head Curve



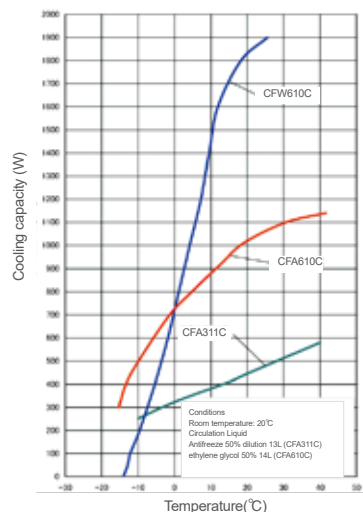
Heating Cooling Curve



Dimension diagram (mm)



Cooling Capacity Curve



Cooling Water Circulators | External Opened Loop, Standard

CLS312C/411C/610C

Operating temp. range CLS312C: -10°C~RT CLS411C/610C: -15°C~RT Temp. adjusting accuracy ±1.5~2°C

Strong cooling capacity, external opened cooling water circulator with ON-OFF control of the refrigeration unit.

Features

- External opened system cooling water circulator with a minimum operating temperature of -10°C and -15°C is used.
- Equipped with a flow adjustment valve to freely adjust the circulation pump flow rate according to the size of water bath.
- Use a flow sensor to monitor pipeline flow, with an automatic stop protection device in case of pipeline blockage, indicated by a flashing red light.
- Include quick automatic stop, automatic start, deviation correction, power outage compensation, temperature output terminal, and other functions.

Safety

- Feature self-diagnosis function, overcurrent leakage protection switch, key lock, power outage compensation function, flow monitoring, refrigeration unit monitoring, refrigeration unit protection time delay timer, flow anomalies, high-pressure anomalies, and other safety protection devices.



Specifications

Model		CLS312C	CLS411C	CLS610C	
System		External opened loop circulation by circulation pump			
Performance	Operating temp. range	-10°C~RT	-15°C~RT		
	Temp. adjusting accuracy	±1.5~2°C			
	Cooling capacity	Approx. 450W (387Kcal/h), at liquid temp. 15°C	Approx. 570W (490Kcal/h), at liquid temp. 15°C	Approx. 820W (705Kcal/h), at liquid temp. 15°C	
Composition	Temp. control	Refrigeration Unit ON-OFF Control			
	Temp. sensor	T-type thermocouple			
	Temp. setting, display	Digital setting, digital display			
	Refrigerator, refrigerant	Air cooling			
		200W, R404A	350W, R404A	600W, R404A	
	Circulation pump	Magnetic pump			
	Device circulation capacity (50Hz)	Max. flow rate	10L/min		15L/min
		Max. lift head	4.9m		8.0m
	Cooling pipe	Copper			
	External circulation port	Inlet and outlet ports are outer diameter 13mm			
Operating ambient temp. range	5~30°C				
Safety device	Self-diagnosis function, overcurrent leakage protection switch, flow monitoring, refrigeration unit monitoring, refrigeration unit protection time delay timer, high-pressure anomalies				
Other functions	Operation monitor, drain tap, temperature output terminal				
Specifications	Water bath dimensions	Inner diameter 120× depth 200mm	Inner diameter 150× depth 200mm		
	Water bath material	SUS304			
	Water bath capacity	1.5L	3L		
	Power supply (50Hz)	AC220V 3A	AC220V 3.5A	AC220V 5.5A	
	External dimensions (W×D×H mm)	410×460×550	380×513×725	380×615×725	
Weight	Approx. 40kg	Approx. 45kg	Approx. 60kg		
Accessories	1 thermal insulation pipe for circulation, 1 pump circulation pipe, 4 clamps, 1 drainage pipe				

- Sterilizers 1
- Granulation and Spray Dryers 2
- Furnaces 3
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- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

Usage cases



The test bath is an optional product

Control panel



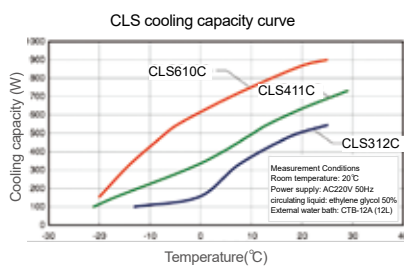
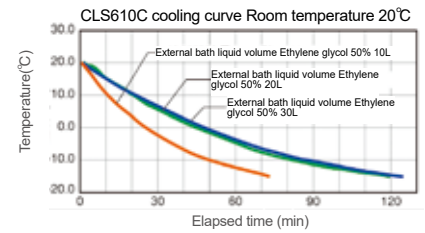
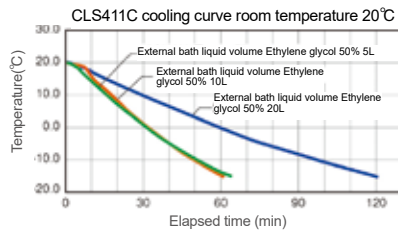
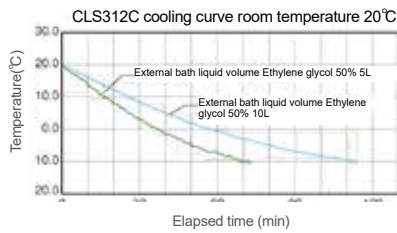
Water level monitoring, refrigeration unit monitoring, refrigeration unit action indicator

Back

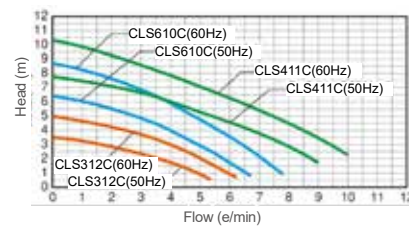


- Due to the installation of a shut-off valve on the discharge side, external circulation can be switched using a quick connector.
- RS485 external communication
- Temperature output terminal

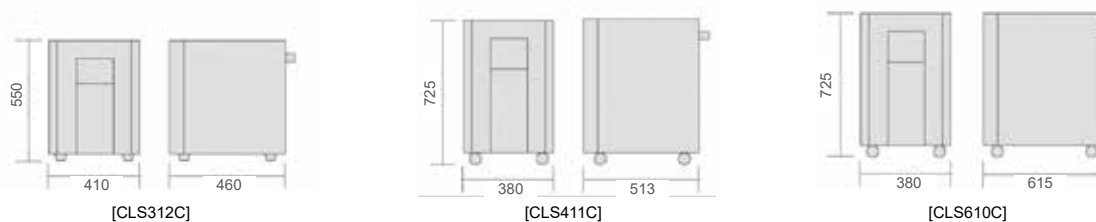
Cooling curve



Flow/head curve



Dimension diagram (mm)



- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options

Precision Constant Temp. Water Circulators | External Opened Loop, High-Precision Temp. Control

CLH312C/411C/610C

Operating temp. range CLH312C: -10°C~80°C CLH411C/610C: -15°C~80°C Temp. adjusting accuracy ±0.1°C

Precision type, external opened water circulator with a temperature adjusting accuracy of ±0.1°C.

Features

- Operating temperature range of -10~+80°C and -15~+80°C for external opened cooling water circulator.
- Equipped with a flow adjustment valve to freely adjust the circulation pump flow rate according to the size of water bath.
- Use a flow sensor to monitor pipeline flow, with an automatic stop protection device in case of pipeline blockage, indicated by a flashing red light.
- Include quick automatic stop, automatic stop, automatic start, deviation correction, power outage compensation, temperature output terminal, and other functions.

Safety

- Feature self-diagnosis function, overcurrent leakage protection switch, key lock, power failure compensation function, as well as flow monitoring, refrigerating machine monitoring, delayed timer for refrigerating machine protection, abnormal flow, abnormal high pressure, and other safety protection devices.



Specifications

Model	CLH312C	CLH411C	CLH610C	
System	External opened loop circulation by circulation pump			
Performance	Operating temp. range	-10~80°C	-15~80°C	
	Temp. adjusting accuracy	±0.1°C		
	Cooling capacity	Approx. 450W (387Kcal/h), at liquid temp. 15°C	Approx. 570W (490Kcal/h), at liquid temp. 15°C	Approx. 820W (705Kcal/h), at liquid temp. 15°C
	Temp. control	PID control		
Composition	Temp. sensor	Temperature regulator: Pt thermal resistor, for overheat protection: K-type thermocouple		
	Temp. setting, display	Digital setting, digital display		
	Heater	Stainless steel heating pipe		
		900W	900W	1.5kW
	Refrigerator, refrigerant	Air cooling		
		200W, R404A	350W, R404A	600W, R404A
	Circulation pump	Magnetic pump		
	Device circulation capacity (50Hz)	Max. flow rate	10L/min	15L/min
		Max. lift head	4.9m	8.0m
	Cooling pipe	Copper		
External circulation port	Inlet and outlet ports are outer diameter 13mm			
Operating ambient temp. range	5~30°C			
Safety device	Self-diagnosis function, overcurrent leakage protection switch, refrigerating unit monitoring, delayed timer for refrigerating unit protection, abnormal flow, abnormal high pressure, overheating protector			
Other functions	Operating display, drain plug, temperature output terminal, RS485 communication function			
Specification	Water bath dimensions	Inner diameter 120× depth 200mm	Inner diameter 150× depth 200mm	
	Water bath material	SUS304		
	Water bath capacity	1.5L	3L	
	Power supply (50Hz)	AC220V 6A	AC220V 7.5A	AC220V 11A
	External dimensions (W×D×H mm)	410×460×550	380×513×725	380×615×725
Weight	Approx. 40kg	Approx. 45kg	Approx. 60kg	
Accessories	1 thermal insulation pipe for circulation, 1 pump circulation pipe, 4 clamps, 1 drainage pipe			

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- Furnaces 3
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- Water Purifiers 7
- Baths 8
- Water Circulators 9
- Rotary Evaporators 10
- Stirrers & Shakers 11
- Options 12

Usage cases



The test bath is an optional product

Control panel



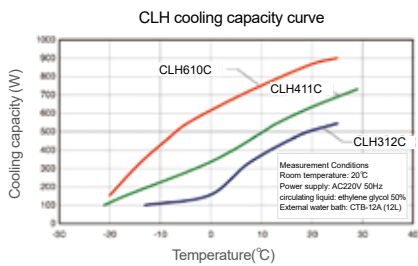
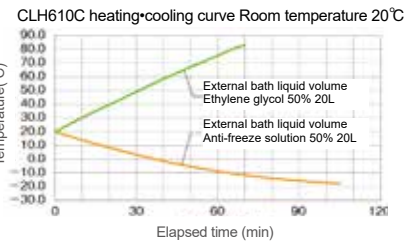
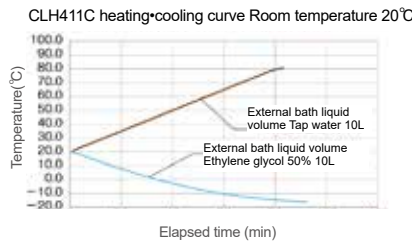
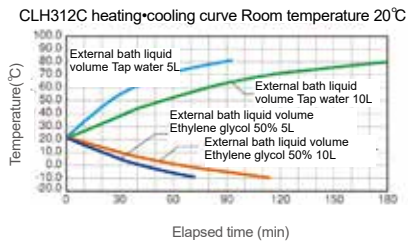
Water level monitoring, refrigeration unit monitoring, refrigeration unit action indicator

Back

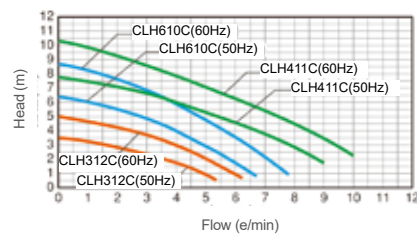


- Due to the installation of a shut-off valve on the discharge side, external circulation can be switched using a quick connector.
- RS485 external communication
- Temperature output terminal

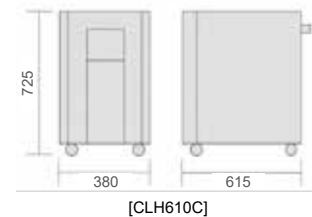
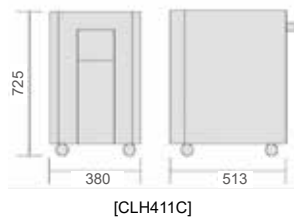
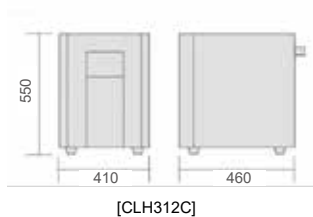
Cooling curve



Flow/head curve



Dimension diagram (mm)



- 1 Sterilizers
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Everything is New!

Rotary Evaporator
RE202/RE212 series

Diagnal

Glassware set A

RE202A
RE212A

Main unit +
Glassware set A

Overall dimensions: 719(W)×324(D)×534(H)mm

RE202AW
RE212AW

Main unit +
Glassware set A

Water Bath

Overall dimensions: 744(W)×365(D)×534(H)mm

RE202AO
RE212AO

Main unit +
Glassware set A

Oil Bath

Overall dimensions: 744(W)×365(D)×534(H)mm

RE202AW
RE212AW

Easy height adjustment with the jack handle

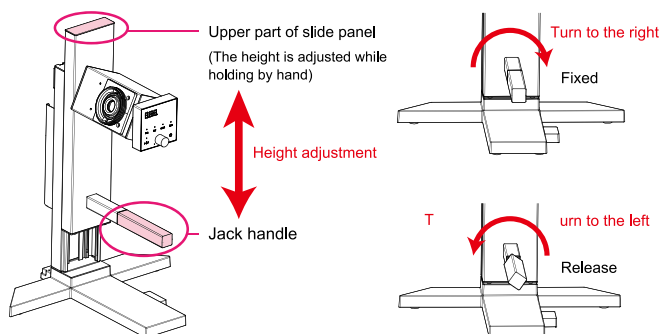
The height adjustment of the body is realized by the jack handle activated by a spring. The spring is adjusted to balance the force with glass and piping connected, and can be raised and lowered with a light force. To fix/release the jack, just twist the handle. A height stroke of up to 200mm is possible, enabling easy to installation and removal of the distillation flask.

Easy height adjustment with the jack handle

The height adjustment of the body is realized by the jack handle activated by a spring. The spring is adjusted to balance the force with glass and piping connected, and can be raised and lowered with a light force. To fix/release the jack, just twist the handle. A height stroke of up to 200mm is possible, enabling easy to installation and removal of the distillation flask.

*When releasing the jack handle, be sure to hold the top of the slide panel with your hand for safety.

*When changing the vertical glassware B type, change the orientation of the condenser holder.





Sterilizers	1
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Furnaces	3
Ovens	4
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Plasma Equipment	6
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Vertical Glassware set B

RE202B
RE212B Main unit + Glassware set B
Overall dimensions: 529(W)×324(D)×745(H)mm

RE202BW
RE212BW Main unit + Glassware set B Water Bath
Overall dimensions: 554(W)×365(D)×745(H)mm

RE202BO
RE212BO Main unit + Glassware set B Oil Bath
Overall dimensions: 554(W)×365(D)×745(H)mm

Intuitive operability, wide rotation speed range

The device is operated by the control panel located in the center. Turning the encoder (knob) slowly adjusts the number of revolutions display by one rpm, and turning it fast by ten rpm. The rotational speed can be set within the wide range of 5 to 315 rpm. After confirming the rpm value, press the ▶|■ keys to rotate the distillation flask. The rotation mode can be selected from forwards rotation, reverse rotation, and automatic reverse that repeats normal rotation and reverse rotation at a set interval.

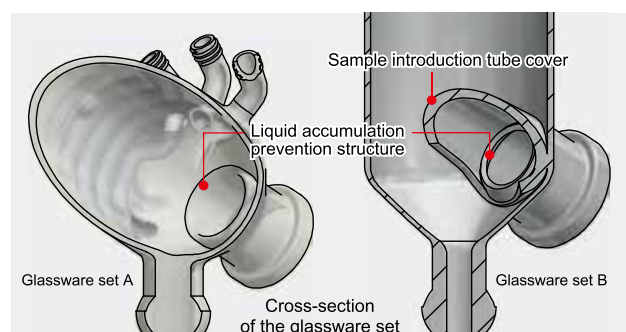
*The current measurement rotational speed, setting rotational speed, parameters, etc. are displayed on the rotational speed display (LED). The speed can be set even during the operation. The brightness of the LED can be adjusted in 8 levels.



Improved durability of vacuum seal with liquid accumulation prevention structure

In order to prevent the condensate accumulated in the condenser from intruding into the vacuum seal along the inside, a liquid drip prevention structure is added in front of the vacuum seal inside the condenser. Dew condensation inside the sample introduction tube cover is also assumed and the liquid collected prevention structure is set up by glassware set B. The durability of the vacuum seal is improved by preventing an invasion of liquid to the vacuum seal part.

*When using ketone or ether solvents, the standard vacuum seal swells. Please use the optional PTFE vacuum seal.



Compact rotary evaporator with high condensation efficiency and simplified maintenance

All functions and conveniences of the RE series are retained, with an all-around space-saving design in length, width, and height. When placed at an angle, 3 devices^{*1} can be stored in 1 fume hood for simultaneous use. Despite the space-saving design, the lift height of the lifter (200mm travel) is greater than that of other brands, ensuring convenient height for installation and flask replacement. Although the lifter operates manually, it moves very easily with the aid of a spring, making it more convenient than electric lifts when using small distillation flasks.

*1 When using vertical glass set



Rotary evaporator Horizontal

RE202A-E/RE212A-D

[Main specifications] ○body + glass set A

○Dimensions: W719×D324×H534mm

(excluding protruding parts) ○weight: 9kg

RE202AW-E/RE212AW-D

[Main specifications] ○main unit + glass set A +

water bath ○Dimensions: W744×D365×H534mm

(excluding protruding parts) ○Weight: 13.5kg

RE202AO-E/RE212AO-D

[Main specifications] ○main unit + glass set A + oil

bath ○Dimensions: W744×D365×H534mm

(excluding protruding parts) ○Weight: 13.5kg

Intuitive operability, wide range of rotation speed settings.

Control the operation of the device through the central panel. Slowly rotate the knob to change the speed with each rotation; when rotating quickly, it changes with every 10 rotations. The speed can be set within a wide range of 5~315rpm. Once the speed is determined, press the Run/Stop key, and the distillation flask begins to rotate. The rotation mode can be divided into forward and reverse, with the option to select forward-reverse cycles or automatic reverse within the set time.

※ The current measured speed and set speed will be displayed in the speed display part. Speed settings can also be made during operation. The brightness of the LED can be adjusted in 8 levels.



Prevention of backflow of condensate in the feed hose (Glass set B)

To prevent the condensate inside the condenser pipe from flowing back into the distillation flask through the feed hose, a feed hose glass sleeve is designed inside the condenser. The glass sleeve wraps the feed hose from the outside, successfully creating a complex structure within the glass pipe.



Rotary evaporator Vertical

RE202B-E/RE212B-D

[Main specifications] ○body + glass set B

○Dimensions: W529×D324×H745mm

(excluding protruding parts) ○weight: 9kg

RE202BW-E/RE212BW-D

[Main specifications] ○main unit + glass set B + water

bath ○Dimensions: W554×D365×H745mm

(excluding protruding parts) ○Weight: 13.5kg

RE202BO-E/RE212BO-D

[Main specifications] ○main unit + glass set B + oil bath

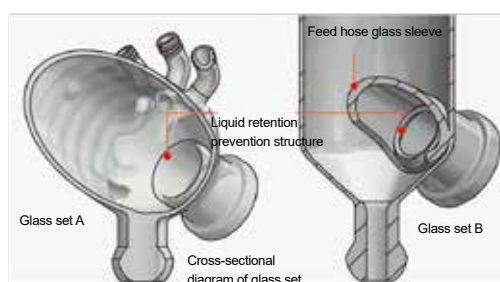
○Dimensions: W554×D365×H745mm

(excluding protruding parts) ○Weight: 13.5kg

Prevent liquid retention structure, improve the lifespan of the vacuum seal.

To prevent condensed liquid retained in the condenser from soaking into the vacuum seal part along the inner wall, a liquid retention prevention structure has been designed in front of the vacuum seal part inside the condenser. In addition, Glass set B considers the condensation inside the feed hose glass sleeve and has also designed a liquid retention prevention structure. By preventing the flow of liquid towards the vacuum part, the lifespan of the vacuum seal ring is improved.

※ When using ketones or ether solvents, the standard vacuum seal ring will corrode and swell, please use a PTFE vacuum seal ring (optional).



Balancing cooling capacity and space saving

Condensers A and B both ensure a condensation surface area of approximately 0.143m², guaranteeing optimal cooling capacity for condensation. The dimensions of Glass set B/E, including the water bath/oil bath, are more compact overall than previous products, allowing multiple units to be placed in a space-limited fume hood.



In the fume hood, set up 3 vertical glass sets.

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

AC adapter is stored neatly

An AC adapter holder is provided on the back of the main unit, and you can store the AC adapter and excess cables in a neat manner. Furthermore, if you use the included back cover to cover the back, it can be placed inside the bench or fume hood with a clean wiring to reduce dust and liquid intrusion.



Two easy-to-clean baths (water bath and oil bath)

There are two kinds of baths available: water and oil bath (water/oil combined use). They have a capacity of 5L, inner diameter of $\Phi 240\text{mm}$. The flat shape with no heater or sensor is installed inside the bath, making cleaning and maintenance easier. A bath is equipped with safety functions such as automatic overheat prevention, upper temperature limit abnormality, and independent overheat prevention (temperature fixed type).



Space saving model with high cooling capacity

The cooling surface area of approx. 0.143m^2 for both A and B type condensers enable high cooling capacity for optimal condensation. The dimensions including the condenser B and the bath has been downsized compared to the conventional product in both width and height. Therefore it requires less space and multiple units can be installed in a limited space such as in a fume hood.

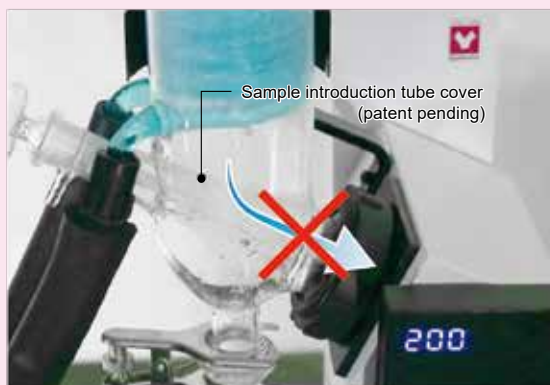
B type vertical condenser without cooling insulation



3 vertical type evaporators installed in a fume hood

A sample introduction tube cover prevents backflow of condensate (Glassware set B)

A sample introduction tube cover is installed in the condenser to prevent the condensate in the condenser from flowing back through the sample introduction tube to the distillation flask. It is shaped to cover the sample introduction tube from the top, realizing an extremely complex structure in which the glass shape to be the cover is mounted inside the condenser.



Examples of standard systems

Product name	Model	Product code
Rotary evaporator	RE202B-E/RE212B-D	255776/255690
Water bath	BM302-E/BM312-D	255387/255411
Externally closed cooling water circulator	CF303-Y/CF313-X	221712/221715
Circulating insulation hose (soft) ID 9mm×OD 13mm×2m, 2pcs	OCF12	221581
Vacuum hose ID 6mm×OD 15mm×5m	-	255297
Diaphragm vacuum pump	N820G2	258838

Total power supply capacity: about 18.6A
 Number of outlets required: 3 (when using a water bath service outlet)



- Sterilizers 1
- Granulation and Spray Dryers 2
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- Plasma Equipment 6
- Water Purifiers 7
- Baths 8
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Specifications

Set Selection Chart

Composition Items	Model	Product code	RE202A-E	RE202AW-E	RE202AO-E	RE202B-E	RE202BW-E	RE202BO-E
			255775	255777	255781	255776	255778	255782
Main body	RE202-E	255774	•	•	•	•	•	•
Glassware set A	RGA202A	255805	•	•	•			
Glassware set B	RGA202B	255806				•	•	•
Water bath	BM302-E	255387					•	
Oil bath	BO302-E	255426			•			•

Specifications (RE202A/B)

Model		RE202A-E	RE202B-E
Product Code		255774+255805	255774+255806
Condenser		Type A (diagonal)	Type B (vertical)
Configuration	Glass condenser	Horizontal double-wound coil (cooling surface area: approx. 0.143m ² , with heat insulation) Vacuum seal (FKM, single-sided PTFE finish)	Vertical double-wound coil (cooling surface area: approx. 0.143m ² , with heat insulation) vacuum seal (FKM, single-sided PTFE finish)
	Rotary joint	☺ 29/38 inner diameter Φ18mm×L284mm	☺ 29/38 inner diameter Φ18×L208mm
	Standard flasks	Evaporative flask (TS29/38, 1L) and clip (POM), receiving flask (S35, 1L), and clamp (SUS)	
	Motor	DC brushless motor	
	Connection nozzle dia.	Outer diameter Φ10mm (cooling water/vacuum)	
Performance	Rotation speed range	5 to 315rpm encoder type digital setting and display	
	Jack	Manual balance type (~200mm stepless adjustment, fixed/released by 90° rotation)	
	Evaporation capacity	Approx. 23 mL/min (water evaporation)	
Safety features		Motor stop function at overload, Over current protection, Over voltage protection	
Other features		Automatic reverse switching by forward/reverse/timer, Power failure recovery (mode selection type)	
Standard	Applicable distillation flask	☺ 29 50 to 2000mL (JIS standard)	
	Applicable receiving flask	100 to 2000mL	
	Power supply (50/60Hz) *	AC100-230V Single phase, A type (3P)/UL/CSA plug	
	Current	1A	
	External dimensions (W×D×Hmm)	719×324×534 (jack maximum position : H734mm)	529×324×745 (jack maximum position : H945mm)
	Weight	9kg (Rotary evaporator body: approx. 7kg+glass set: approx. 2kg)	
Accessories	RE202	Instruction manual, AC adapter, Power cord (approx. 2 m), Bath guide, back cover, Velcro (one side and both sides), Condenser holder, Hex. wrench	
	Glassware	Flask clip, Receiver flask clip, Vacuum seal, Flask pusher, Thermal insulation for condenser	

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

Specifications (Water Bath/Oil Bath)

Bath type		Water Bath	Oil Bath
Product Code		255387	255426
Model		BM302-E	BO302-E
Performance	Temperature range	Room Temp. +10 to 90°C	Room Temp. +10 to 180°C
	Temp. adjustment accuracy	±1.0°C	±1.5°C (water), ±2°C (oil)
Performance	Exterior material	PBT (with glass fiber)	
	Bath internal material	Stainless steel	
Safety features		Automatic overheat prevention, Upper temperature limit abnormality, Independent overheat prevention (fixed temperature type), Power supply cut off by power supply fuse, Sensor disconnection detection	
Other features		Calibration offset, overshoot notification, Power failure recovery function (mode selection type), 2A service outlet	
Standard	Power source (50/60Hz)	AC100-115V 10-12A (Service outlet 2A excluded) (15A)	
	Bath internal dimensions and capacity	Φ240×119mm/Approx. 5L	
	External dimensions	Φ262 (Up to 286 mm in depth)×H 240mm	
	Weight	Approx.4.5kg	
Accessories		Instruction manual, Power cord (approx. 3m), Fuse 15A (large), Fuse 2A (small)	

*1 Please use water by below 90°C.

*2 Do not include protrusions.

■ Specifications

Set Selection Chart

Composition Items	Model	Product code	RE212A-D	RE212AW-D	RE212AO-D	RE212B-D	RE212BW-D	RE212BO-D
			255687	255688	255689	255690	255691	255692
Main body	RE212-D	255683	•	•	•	•	•	•
Glassware set A	RGA202A	255805	•	•	•			
Glassware set B	RGA202B	255806				•	•	•
Water bath	BM312-D	255411		•			•	
Oil bath	BO312-D	255404			•			•

Specifications (Water Bath/Oil Bath)

Bath type		Water Bath	Oil Bath
Product Code		255411	255404
Model		BM312-D	BO312-D
Performance	Temperature range	Room Temp. +10 to 90°C	Room Temp. +10 to 180°C ^{*1}
	Temp. adjustment accuracy	±1.0°C	±1.5°C (water), ±2°C (oil)
Performance	Exterior material	PBT (with glass fiber)	
	Bath internal material	Stainless steel	
Safety features		Automatic overheat prevention, Upper temperature limit abnormality, Independent overheat prevention (fixed temperature type), Power supply cut off by power supply fuse, Sensor disconnection detection	
Other features		Calibration offset, overshoot notification, Power failure recovery function (mode selection type)	
Standard	Power source (50/60Hz)	AC200 to 230V 5-6A Single phase	
	Bath internal dimensions and capacity	Φ240×119mm/Approx. 5L	
	External dimensions ^{*2}	Φ262 (Up to 286 mm in depth)×H 240mm	
	Weight	Approx. 4.5kg	
Accessories		Instruction manual, Power cord (approx. 3m), Fuse 15A (large), Fuse 2A (small)	

*1 Please use water by below 90°C.

*2 Do not include protrusions.

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Body + glass set (A/B) specifications

Series		RE212-D	
Vacuum controller		-	
Model		RE212-D + RGA202A/RGB202A	RE212-D + RGA202B/RGB202B
Composition	Condenser pipe	Dual serpentine tubes (Cooling surface area: approx. 0.143m ² , with insulation material) Vacuum sealing ring (FKM, surface PTFE treated) Condensate retention prevention	Longitudinal dual serpentine tubes (Cooling surface area: approx. 0.143m ² , with insulation material) Vacuum sealing ring (FKM, surface PTFE treated) Condensate retention prevention, condensate backflow prevention
	Rotary joint	TS29/38(RGA202A), TS24/40(RGB202A), inner diameter 18×L284mm	TS29/38(RGA202B), TS24/40(RGB202B), inner diameter Φ18×L208mm
	Flask	Distillation flask (TS29/38, 1L), flask clip (POM), recovery flask (S35/20, 1L), flask clip (SUS)	
	Motor	DC servo motor	
	Interface size	Outer diameter Φ10mm (cooling water · vacuum)	
Performance	Rotational speed range	5~315rpm White LED digital setting and display	
	Lifter stroke	Manual balance type (~200mm stepless adjustment, 90° rotation lock/release)	
	Distillation flask evaporation capacity	~23mL/min (water evaporation rate)	
	Vacuum degree	Below 1000Pa	
Safety functions		Motor overload stop function, overcurrent protection, overvoltage protection	
Other functions		Forward/reverse/timer automatic forward-reverse switch, power outage recovery (mode selection)	
Specifications	Distillation flask	50~2000mL	
	Recovery flask	100~2000mL	
	Power supply	AC100~230V	
	Current	1A	
	External dimensions	W719× D324× H534mm (Lifter highest position: H734mm)	W529× D324× H745mm (Lifter highest position: H945mm)
Accessories	Weight	Approx. 9kg (main body: approx. 7kg + glass set: approx. 2kg)	
	Body	Manual, AC power adapter, power cord (approx. 2m), guide groove, rear protective plate, hook and loop fastener (single-sided, double-sided), pipe holder and hex wrench (inside glass set B/E)	
	Glass set	Distillation flask, distillation flask clip, recovery flask, recovery flask clip, vacuum sealing ring, flask propeller (for ST29), cooling pipe insulation material manual, sample introduction tap, connecting rotary shaft, vacuum nozzle (gray), cooling nozzle (black), cooling pipe nut, ring spring	

*1 For vacuum controller specifications, refer to VR102S controller specifications

Vacuum pump specifications

Model	N820G2
Pumping speed ^{*1}	9~20L/min (with manual adjustment knob)
Wetted materials	PTFE/FFPM
Ultimate pressure	Lowest speed 600Pa (air ballast valve closed)
	Highest speed 800Pa (air ballast valve closed)
Vacuum hose connection port outer diameter	Φ10.6/Φ9 (2-stage)
Power supply	AC100~240V 50/60Hz 1A
External dimensions	W163×D259× H220mm (excluding protrusions)
Allowable ambient temp.	+5~+40℃
Allowable solvent temp.	+5~+40℃
Safety functions	Overcurrent protection, temperature protection (motor), lock protection (motor)
Weight	Approx. 8.8kg

* Measurement conditions: atmospheric pressure, temperature 20℃

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

7 Water Purifiers

8 Baths

9 Water Circulators

10 Rotary Evaporators

11 Stirrers & Shakers

12 Options

Cooling circulator specifications

Model		CF313-X	CF303-Y	CF313-Y	CF812-D
System		External sealed loop circulation by circulation pump			
Performance	Operating temp. range ^{*1}	-20~30°C			
	Temp. control accuracy ^{*2}	±1.0°C(≧0°C) ±1.5°C(<0°C)			±1.0°C
	Cooling capacity ^{*2}	Approx. 450W at liquid temperature 10°C Approx. 330W at liquid temperature -10°C			Approx. 1230W at liquid temperature 10°C Approx. 560W at liquid temperature -10°C
	Maximum flow rate ^{*3}	Approx. 9L/min	Approx. 10L/min		Approx. 12L/min(50Hz), Approx. 14L/min(60Hz)
	Maximum lift ³	Approx. 4.3m	Approx. 5.7m		Approx. 10.3m(50Hz), Approx. 14.3m(60Hz)
Composition	Temp. control	Refrigerator ON-OFF control			
	Temp. sensor	Pt100Ω			
	Refrigerator · refrigerant	Air-cooled 450W R452A			Air-cooled 650W R407C
	Circulation pump	15W	15W	20W	156W
Safety device	Overcurrent leakage circuit breaker, temperature sensor error, temperature upper/lower limit warning, temperature upper/lower limit abnormality, refrigerator high-pressure switch, fan motor protection, circulation pump protection, refrigerator protection delay timer			Overcurrent leakage circuit breaker, temperature sensor error, temperature upper/lower limit warning, temperature upper/lower limit abnormality, refrigerator overheating relay, refrigerator high-pressure switch, fan motor protection, circulation pump protection, refrigerator protection delay timer	
Other functions	Suction port dust filter, cooling operation switch, circulation pump switch, deviation correction, power outage reset mode selection function				
	Water bath material	Stainless steel			
	Water bath capacity	Approx. 3.9L (liquid volume 3.5L)			Approx. 16L (liquid volume 14L)
	External dimensions	W205×D396×H535mm (excluding protrusions)			W340×D370×H838mm (excluding protrusions)
	Power supply	AC220V 50Hz 3.8A	AC115V 60Hz 6.6A	AC220V 60Hz 4.0A	AC220V 50/60Hz 5.5A
	Weight	Approx. 30kg			Approx. 43kg
Accessories	Soft hose nozzles (for soft hose connection) 2 pcs, 1m condensate drain hose (inner diameter Φ12mm) 1 pc, condensation water hose clamp 2 pcs, manual 1 pc				

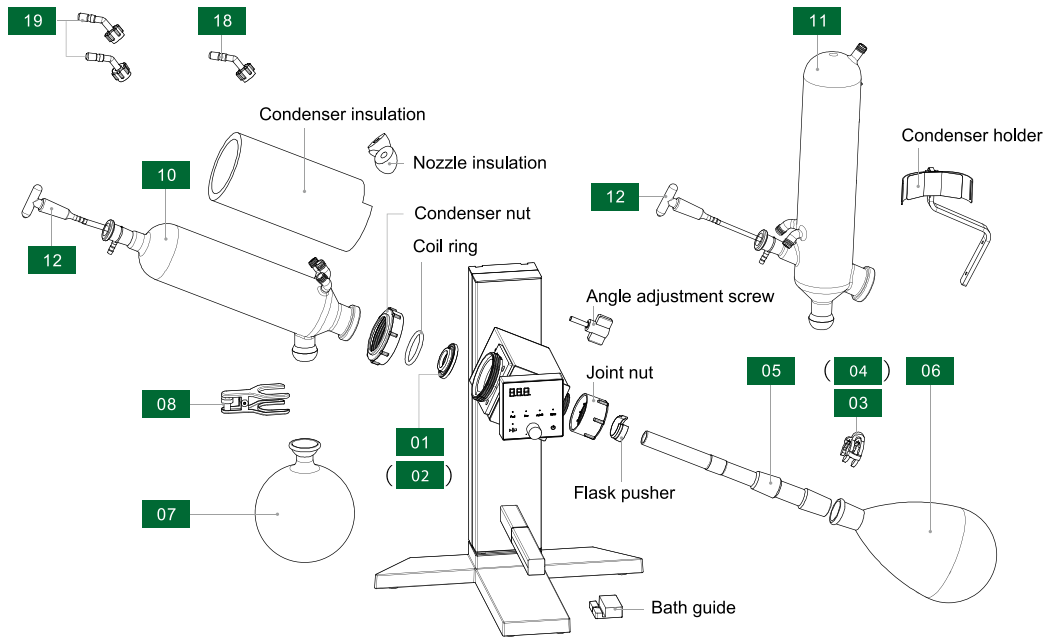
*1 No heating function. Depending on the ambient temperature and connection conditions, it may not reach -20°C

*2 Performance values at ambient temperature 20°C, power supply voltage AC220V. Temperature control accuracy is the specification value calculated using JTMK05, temperature variation is calculated using JIS

*3 Capacity value at tap water, liquid temperature 20°C

Sterilizers	1
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Stirrers & Shakers	11
Options	12

Optional Items



Component and optional items

A Glassware set A (standard accessories)

B Glassware set B (standard accessories)



01 Vacuum seal ORE27 <255740>	A B	02 PTFE Vacuum seal ORE29 <255741>
Material : FKM (Single sided PTFE), 2pcs.		Material : PTFE, Chemical resistant, 1pc.



03 Clip ORE41 <255747>	A B	04 Clip ORE43 <255748>
Material : POM, ¥29, 2pcs.		Material : POM, ¥24, 2pcs.

05 Rotary joints					
For	Ground glass joint	Size	Model	Product code	
Glassware set A (for RG202A)	Standard	¥29/38 L284mm	ORE72	255720	A
		¥24/40 L286mm	ORE76	255722	
	Transparent	¥29/38 L284mm	ORE82	255724	
		¥24/40 L286mm	ORE86	255726	
Glassware set B (for RG202B)	Standard	¥29/38 L208mm	ORE74	255721	B
		¥24/40 L210mm	ORE78	255723	
	Transparent	¥29/38 L208mm	ORE84	255725	
		¥24/40 L210mm	ORE88	255727	

Transparent Ground glass joint : The sample does not easily get into the gap of the slide and is easy to clean.

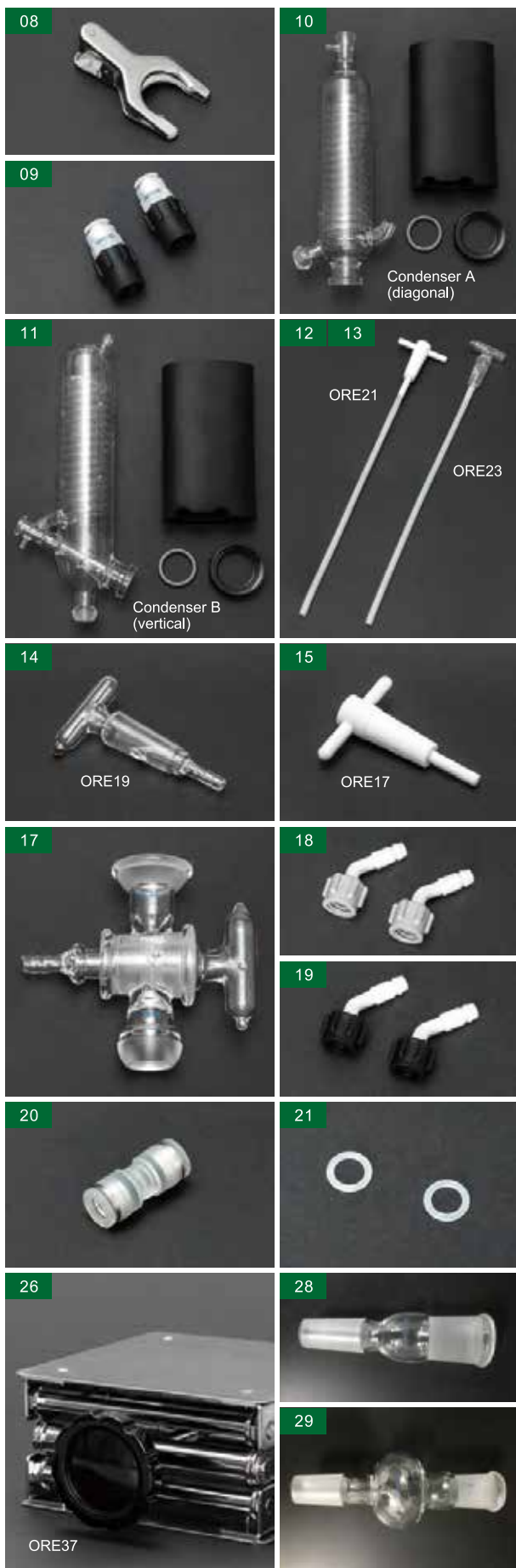


06 Evaporating flasks			
Size	Capacity	Model	Product code
¥29/38	100mL	ORE24	255701
	200mL	ORE26	255702
	300mL	ORE28	255703
	500mL	ORE32	255704
	1000mL	ORE34	255705
	2000mL	ORE36	255706
¥24/40	100mL	ORE42	255708
	200mL	ORE44	255709
	300mL	ORE46	255710
	500mL	ORE48	255711
	1000mL	ORE52	255712
	2000mL	ORE54	255713

Low rotational shake type

07 Receiving flasks		
Capacity	Model	Product code
100mL	ORE56	255714
200mL	ORE58	255715
300mL	ORE62	255716
500mL	ORE64	255717
1000mL	ORE66	255718
2000mL	ORE68	255719

S35/20 is JIS standard



08 Spherical joint clip **A B**
 ORE45 <255749>
 Stainless steel, S35/20 is JIS standard, 1pc.

10 Condenser A (diagonal) **A**
 ORE47 <255750>
 Includes : Condenser insulation, Condenser nut and Coil ring

12 Sample induction cock (glass) **A B**
 ORE23 <255738> Set of **14** + **16**

14 Cock (glass)
 ORE19 <255736>
 Material : Glass, F19/38

16 Sample induction tube
 ORE25 <255739>
 Material : PTFE
 Length 520mm (cut to L345mm for condenser B)

18 Vacuum nozzle (gray) **A B**
 ORG80 <255512>
 GL14, OD 10mm, 2pcs.

20 Relay connector *1
 ORE35 <255744>
 OD 10mm, 1pc.
 for circulation insulation hose (hard)

22 Vacuum hose
 <255297>
 ID 6mm x OD 15mm x 5m, 1pc.

24 Circulating insulation hose (soft)
 OCF12 <221581>
 ID 9mm x OD 13mm x 2m (heat insulation OD 28mm), (ethylene propylene), 2pcs., with 4 clamps, for cooling water

26 Laboratory jack
 ORE37 <255745>
 150 x 150mm, Height : 75 to 245mm

28 Equal/Different diameter joints

Standards (female→male)	Model	Product code
$\text{F24/40} \rightarrow \text{F24/40}$ L105mm	ORE11	255732
$\text{F24/40} \rightarrow \text{F19/38}$ L103mm	ORE13	255733
$\text{F24/40} \rightarrow \text{F15/25}$ L90mm	ORE15	255734
$\text{F29/38} \rightarrow \text{F29/38}$ L106mm	ORE92	255728
$\text{F29/38} \rightarrow \text{F24/40}$ L108mm	ORE94	255729
$\text{F29/38} \rightarrow \text{F15/25}$ L93mm	ORE98	255731
$\text{F29/38} \rightarrow \text{F19/38}$ L106mm	ORE96	255730

29 Trap bulbs (Round shape, 100mL)

Standards (female→male)	Product code
$\text{F29/42} \rightarrow \text{F19/38}$ L173mm	RE200GT001
$\text{F29/42} \rightarrow \text{F29/42}$ L183mm	RE200GT002
$\text{F29/42} \rightarrow \text{F24/40}$ L173mm	RE200GT003
$\text{F29/42} \rightarrow \text{F15/25}$ L160mm	RE200GT004

09 One-touch connector *1
 ORE33 <255743>
 GL14, OD 10mm, 2pcs., for circulating insulation hose (hard)

11 Condenser B (vertical) **B**
 ORE49 <255751>
 Includes : Condenser insulation, Condenser nut and Coil ring

13 Sample induction cock (PTFE)
 ORE21 <255737> Set of **15** + **16**

15 Cock (PTFE)
 ORE17 <255735>
 Material : PTFE, F19/38

17 Three-way cock
 ORG50 <255363>
 Used for switching the receiving flasks during operation S35/20 male/female, Length114mm

19 Cooling nozzle (black) **A B**
 ORE31 <255742>
 OD 10mm, 2pcs.

21 Nozzle packing
 OCF40 <281494>
 Silicon, 12 pcs., for vacuum/cooling nozzle

23 Circulating insulation hose (hard)*1
 OCF78 <281475>
 ID 6.5mm x OD 10mm x 2m, (Insulatin outside diameter 22mm) Hard (polyurethane), 2pcs.

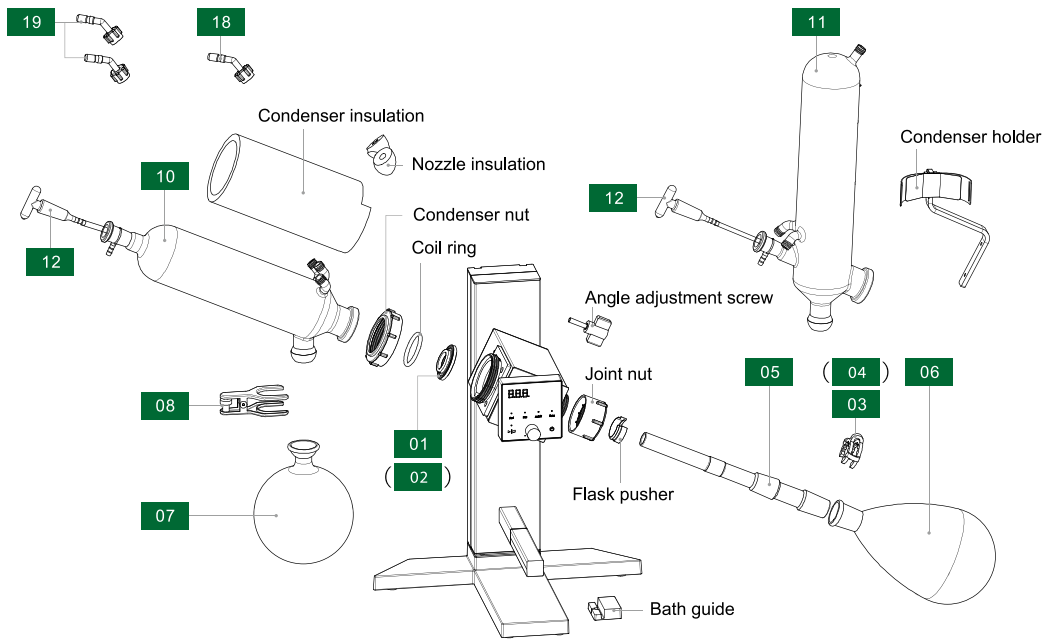
25 Circulating insulation hose (soft)
 OCF62 <221599>
 ID 9mm x OD 14mm x 2m (heat insulation OD 41mm), (silicon), 2pcs., with 4 clamps, for cooling water

27 Laboratory jack
 ORE39 <255746>
 200 x 200mm, Height : 75 to 245mm

*1 When using a circulation insulation hose (hard), change the cooling nozzle (black) to one-touch connector before use. Also, when extending, relay connectors are required.

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Optional Items



Component and optional items

A Glassware set A (standard accessories)

B Glassware set B (standard accessories)



01 Vacuum seal
ORE27 <255740>

A B

02 PTFE Vacuum seal
ORE29 <255741>

Material : FKM (Single sided PTFE), 2pcs.

Material : PTFE, Chemical resistant, 1pc.

03 Clip
ORE41 <255747>

04 Clip
ORE43 <255748>

A B

Material : POM, ¥29, 2pcs.

Material : POM, ¥24, 2pcs.



05 Rotary joints

For	Ground glass joint	Size	Model	Product code
Glassware set A (for RG202A)	Standard	¥29/38 L284mm	ORE72	255720
		¥24/40 L286mm	ORE76	255722
	Transparent	¥29/38 L284mm	ORE82	255724
		¥24/40 L286mm	ORE86	255726
Glassware set B (for RG202B)	Standard	¥29/38 L208mm	ORE74	255721
		¥24/40 L210mm	ORE78	255723
	Transparent	¥29/38 L208mm	ORE84	255725
		¥24/40 L210mm	ORE88	255727

Transparent Ground glass joint : The sample does not easily get into the gap of the slide and is easy to clean.



06 Evaporating flasks

Size	Capacity	Model	Product code
¥29/38	100mL	ORE24	255701
	200mL	ORE26	255702
	300mL	ORE28	255703
	500mL	ORE32	255704
	1000mL	ORE34	255705
	2000mL	ORE36	255706
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	200mL	ORE44	255709
	300mL	ORE46	255710
	500mL	ORE48	255711
	1000mL	ORE52	255712
	2000mL	ORE54	255713

Low rotational shake type

07 Receiving flasks

Capacity	Model	Product code
100mL	ORE56	255714
200mL	ORE58	255715
300mL	ORE62	255716
500mL	ORE64	255717
1000mL	ORE66	255718
2000mL	ORE68	255719

A B

S35/20 is JIS standard

- 1 Sterilizers
- 2 Granulation and Spray Dryers
- 3 Furnaces
- 4 Ovens
- 5 Incubators
- 6 Plasma Equipment
- 7 Water Purifiers
- 8 Baths
- 9 Water Circulators
- 10 Rotary Evaporators
- 11 Stirrers & Shakers
- 12 Options



<p>08 Spherical joint clip A B ORE45 <255749> Stainless steel, S35/20 is JIS standard, 1pc.</p>	<p>09 One-touch connector *1 ORE33 <255743> GL14, OD 10mm, 2pcs., for circulating insulation hose (hard)</p>																								
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<p>16 Sample induction tube ORE25 <255739> Material : PTFE Length 520mm (cut to L345mm for condenser B)</p>	<p>17 Three-way cock ORG50 <255363> Used for switching the receiving flasks during operation S35/20 male/female, Length114mm</p>																								
<p>18 Vacuum nozzle (gray) A B ORG80 <255512> GL14, OD 10mm, 2pcs.</p>	<p>19 Cooling nozzle (black) A B ORE31 <255742> OD 10mm, 2pcs.</p>																								
<p>20 Relay connector *1 ORE35 <255744> OD 10mm, 1pc. for circulation insulation hose (hard)</p>	<p>21 Nozzle packing OCF40 <281494> Silicon, 12 pcs., for vacuum/cooling nozzle</p>																								
<p>22 Vacuum hose <255297> ID 6mm × OD 15mm × 5m, 1pc.</p>	<p>23 Circulating insulation hose (hard)*1 OCF78 <281475> ID 6.5mm × OD 10mm × 2m, (Insulation outside diameter 22mm) Hard (polyurethane), 2pcs.</p>																								
<p>24 Circulating insulation hose (soft) OCF12 <221581> ID 9mm × OD 13mm × 2m (heat insulation OD 28mm), (ethylene propylene), 2pcs., with 4 clamps, for cooling water</p>	<p>25 Circulating insulation hose (soft) OCF62 <221599> ID 9mm × OD 14mm × 2m (heat insulation OD 41mm), (silicon), 2pcs., with 4 clamps, for cooling water</p>																								
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<p>28 Equal/Different diameter joints</p> <table border="1"> <thead> <tr> <th>Standards (female→male)</th> <th>Model</th> <th>Product code</th> </tr> </thead> <tbody> <tr> <td>¥24/40 → ¥24/40 L105mm</td> <td>ORE11</td> <td>255732</td> </tr> <tr> <td>¥24/40 → ¥19/38 L103mm</td> <td>ORE13</td> <td>255733</td> </tr> <tr> <td>¥24/40 → ¥15/25 L90mm</td> <td>ORE15</td> <td>255734</td> </tr> <tr> <td>¥29/38 → ¥29/38 L106mm</td> <td>ORE92</td> <td>255728</td> </tr> <tr> <td>¥29/38 → ¥24/40 L108mm</td> <td>ORE94</td> <td>255729</td> </tr> <tr> <td>¥29/38 → ¥15/25 L93mm</td> <td>ORE98</td> <td>255731</td> </tr> <tr> <td>¥29/38 → ¥19/38 L106mm</td> <td>ORE96</td> <td>255730</td> </tr> </tbody> </table>		Standards (female→male)	Model	Product code	¥24/40 → ¥24/40 L105mm	ORE11	255732	¥24/40 → ¥19/38 L103mm	ORE13	255733	¥24/40 → ¥15/25 L90mm	ORE15	255734	¥29/38 → ¥29/38 L106mm	ORE92	255728	¥29/38 → ¥24/40 L108mm	ORE94	255729	¥29/38 → ¥15/25 L93mm	ORE98	255731	¥29/38 → ¥19/38 L106mm	ORE96	255730
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*1 When using a circulation insulation hose (hard), change the cooling nozzle (black) to one-touch connector before use. Also, when extending, relay connectors are required.

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Stirrers & Shakers

Contents

Shakers	184
Magnetic Stirrers	186

Shakers | Horizontal • Vertical • Orbital • Dual Vertical Shaking

SA300/320/400

Shaking rate 20~300rpm (SA300/400) 20~210rpm (SA320)

Amplitude 40mm



SA320

SA300



SA320

SA400

Two-dimensional shaking (horizontal + vertical) (SA300), three-dimensional shaking (horizontal orbital + vertical orbital) (SA320), and dual vertical shaking (SA400)—ideal for large-volume sample extraction, cultivation, mixing, and stirring.

Features

- DC motor provides stable torque across a wide speed range.
- Compact design with a high load capacity for shaking.
- Continuous operation is possible; the unit can also be stopped at any time.

SA300/320

- Large tray for horizontal shaking, enabling two-dimensional shaking (horizontal + vertical) for versatile applications.
- The SA320 supports vertical orbital shaking, delivering excellent mixing performance even in a horizontal configuration. It also provides high shaking efficiency for large-volume samples under vertical shaking.
- A wide range of optional items is available for different applications.

SA400

- Enables simultaneous shaking of six 1 L Erlenmeyer flasks or four 2 L Erlenmeyer flasks.
- Equipped with a rotation speed setting and a digital revolution counter for easy monitoring.

Specifications

Model	SA300	SA320	SA400
Shaking method	Horizontal · vertical reciprocating shaking	Horizontal · vertical orbital shaking	Vertical reciprocating dual shaking
Max. number of separatory funnel holders	100mL×5, 200mL×4, 300mL×4, 500mL×4, 1,000mL×3, 2,000mL×2		100mL×10, 200mL×8, 300mL×8, 500mL×8, 1,000mL×6, 2,000mL×4
Oscillating frequency	Horizontal shaking 20~300 rpm vertical shaking 20~300 rpm	Horizontal orbital shaking 20~210 rpm vertical orbital shaking 20~210 rpm	Vertical shaking 20~300 rpm
Speed setting display	Variable scale on dial		Dial setting, digital display
Timer	Dial setting 0~60 min (minimum scale 5 min) with continuous operation switch		
Motor	DC motor 90w		
External dimensions	W460×D460×H423mm		W520×D460×H483 mm
Body weight	Approx. 40kg		Approx. 39kg
Power supply *	AC110/115/120/220/230/240V		
Accessories	One fuse, one set of carbon brushes		

* Voltage modifications other than the listed specifications are also available. Please contact us for details.

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

4 Ovens

5 Incubators

6 Plasma Equipment

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11 Stirrers & Shakers

12 Options

Made in Japan

Horizontal shaking (SA300)



Orbital shaking (SA320)



Vertical shaking (SA300/400)



Options

Centrifuge tube shaking rack



Horizontal-vertical shaking for SA300/320/400

Product number	Specifications	Number of stands
232087	Φ16~35mm Length 110~130mm	18 pcs

Test tube shaking rack



Horizontal shaking for SA300/320

Product number	Specifications	Number of stands
232086	Φ16.5~18mm Length 160~190mm	18 pcs

2L separating funnel shaking rack



Vertical shaking for SA300/320/400

Product number	Specifications
232089	50mL, 100mL~1,000mL 2,000mL

Separating funnel shaking rack



Vertical shaking for SA300/320/400

Product number	Specifications
232096	500mL and 1,000mL skive-type cannot be fitted.

Test tube shaking rack base



Horizontal shaking for SA300/320

Product number	Specifications
232088	2 layers, maximum test tube rack width 238×depth 121×height 105 mm

● Installation Platform To Be Purchased Separately.

Non-slip mat



Horizontal shaking for SA300/320

Product number	Specifications
232071	Thickness 1 mm Width 450×Depth 396mm

● Installation Platform To Be Purchased Separately.

Erlenmeyer flask shaking rack



Horizontal shaking for SA300/320

Product number	Specifications
232097	100mL~1,000mL

Erlenmeyer flask clamp



Horizontal shaking for SA300/320

Product number	Specifications	Number of stands
232062	For 100 mL	10 sets
232063	For 200 mL	9 sets
232064	For 300 mL	5 sets
232065	For 500 mL	4 sets
232066	For 1,000 mL	2 sets

● Installation Platform To be purchased separately

Installation platform



Horizontal shaking for SA300/320

Product number	Specifications
232095	Number of erlenmeyer flask clamps: 28 pcs for 100 mL, 19 pcs for 200 mL, 14 pcs for 500 mL, 9 pcs for 1,000 mL

2-layer spring shaking rack



Horizontal shaking for SA300/320

Product number	Specifications
232079	Φ16 mm test tubes 320 pcs (Grid spacing 20 mm)

Sterilizers	1
Granulation and Spray Dryers	2
Furnaces	3
Ovens	4
Incubators	5
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Magnetic Stirrers | Magnetic Stirring

MFD800-Y/810-Y

Made in
Japan

Rotation rate 50~1600rpm (set in 10rpm increments)

Optimized stirring performance with user-friendly features.



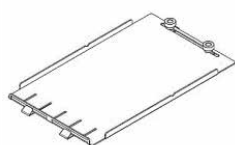
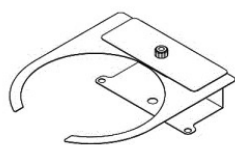
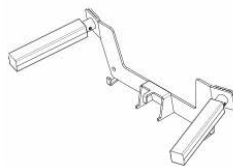
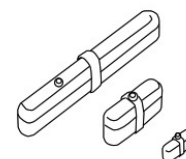
Features

- Suitable for synthesis applications requiring high temperature accuracy and efficient stirring.
- The strong magnetic coupling maintains stable stirring even if the flask is moved, and stirring continues even when the stirrer is slightly off-center on the top plate.
- Includes a step-out (stir-bar decoupling) detection function to help restore stirring automatically.
- When used with the dedicated oil bath BOG/BOS series, the recessed bottom of the oil bath can be fitted into the top plate of the MFD810-Y, reducing the risk of misalignment or falling due to vibration.
- Offers a wide range of convenient rotation (stirring) functions.
- The top plate is heat-resistant and chemical-resistant.

Specifications

Model		MFD800-Y	MFD810-Y
Performance	Speed Range	50~1600rpm (set in 10rpm increments)	
	Motor	DC brushless motor (31W)	
Composition	Magnet used	Neodymium magnet	
	Display	White led digital display	
	Exterior material	Aluminum die-casting	
	Top table	Aluminum die-casting (ceramic coating)	
Stirring motor functions (rotation modes)		Constant speed, decoupling detection, intermittent, reverse, slow ramp	
Safety functions		Overcurrent fuse	
Other functions		Service socket	
Specifications	External dimensions (l*d*h)	165×275×90mm stirring table diameter Φ135mm	
	Load capacity	Less than 30kg	
	Power supply	115V±5% 0.25A 50/60Hz	230V±5% 0.15A 50/60Hz
	Overcurrent fuse capacity	For internal circuit: 0.5A for service outlet: 5A	
	Power supply line	2m insert type FG plug	
	Weight	Approx. 2.8kg	
	Usage environment temp. range	4~40°C	
Accessories		Heat cut plate 1pc, protection cover 1pc, screw caps 2pcs, power cable 1pc, spare fuse (for service outlet, MFD800-Y only) 1pc each, instruction manual 1 copy, conversion plug (MFD810-Y only)	

Related optional items

Laboratory lift
OA147Container overturn
prevention frame
OA146Dual-hand
aluminum block
handle
OA145Single-hand
aluminum block
handle
OA144Strong magnetic
stirring bar
OA149/150/151

Magnetic Stirrers | Magnetic Stirring with Heating Function

MFH800-Y/810-Y

Made in Japan

Rotation rate 50~1600rpm (set in 10rpm increments)

Temp. control range Room Temperature +25°C~310°C

Magnetic stirrer with heating function.



Features

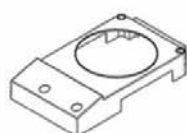
- The strong magnetic coupling maintains stable stirring even if the flask is moved, and stirring continues even when the stirrer is slightly off-center on the top plate.
- Features a patented aluminum-block thermostatic bath design.
- Multiple aluminum-block configurations are available.
- Includes a step-out (stir-bar decoupling) detection function to help restore stirring automatically.
- When used with the dedicated oil bath BOG/BOS series, the recessed bottom of the oil bath can be fitted into the top plate of the MFH810-Y, reducing the risk of misalignment or falling due to vibration.
- Offers a wide range of convenient rotation (stirring) functions.
- The top plate (hotplate) is heat-resistant and chemical-resistant.

Specifications

Model	MFH800-Y	MFH810-Y		
Hot Plates	Yes			
Performance *1	Speed Range	50~1600rpm (set in 10rpm increments)		
	Temp. control range:	Room Temperature +25°C ² ~310°C (set in 1°C increments)		
	Temp. adjusting accuracy	±1.5°C at 100°C (internal temperature sensor); ±1.0°C at 50°C (external temperature sensor)		
	Display	White led digital display		
Composition	Motor	DC brushless motor (31W)		
	Magnet used	Neodymium magnet		
	Temp. control method	PID control		
	Temp. sensor	PT100		
	Heater	600W Mica heater		
	Exterior material	Aluminum die-casting		
	Top table	Aluminum die-casting (ceramic coating)		
Stirring motor functions (rotation modes)	Constant speed, decoupling detection, intermittent, reverse, slow ramp			
Safety functions	Overcurrent fuse			
Other functions	Service socket			
Specifications	External dimensions (L*D*H) ³	165×275×90mm stirring table diameter Φ135mm		
	Load capacity	Less than 30kg		
	Power supply	115V±5% 0.25A 50/60Hz	230V±5% 3A 50/60Hz	
	Overcurrent fuse capacity	For internal circuit: 7A for service outlet: 5A		
	Power supply line	2m insert type FG plug		
	Weight	Approx. 3.0kg		
	Usage environment temp. range	4~40°C		
Included accessories ⁴	Heat cut plate 1pc, protection cover 1pc, screw caps 2pcs, power cable 1pc, spare fuse (for service outlet, MFH800-Y only) 1pc each, instruction manual 1 copy, external temperature sensor 1pc, conversion plug (MFH810-Y only)			

*1 Power Supply AC 220V±5%, Room Temperature 23°C±5°C, Humidity 65% RH±20%, when using internal sensor without load, when using external temperature sensor value is inserted into the optional aluminum block. *2 At room temperature 23°C, speed 1600rpm (maximum condition) self-heating value. *3 Excluding protruding parts. *4 This product does not include a stir bar.

Related optional items



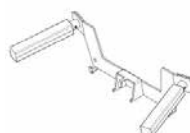
Protection cover (for MFH) OA155



Laboratory lift OA147



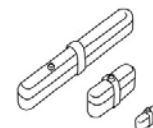
Container overturn prevention frame OA146



Dual-hand aluminum block handle OA145



Single-hand aluminum block handle OA144



Strong magnetic stirring bar OA149/150/151

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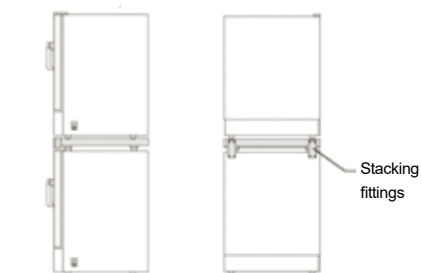
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Stacking Fittings

OD·ODN·ODK

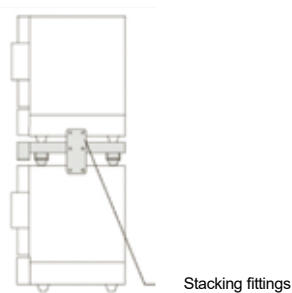
■ OD40C/60C, ODN26C/28C

Dimension diagram (mm)



■ ODK80C/82C/84C

Dimension diagram (mm)

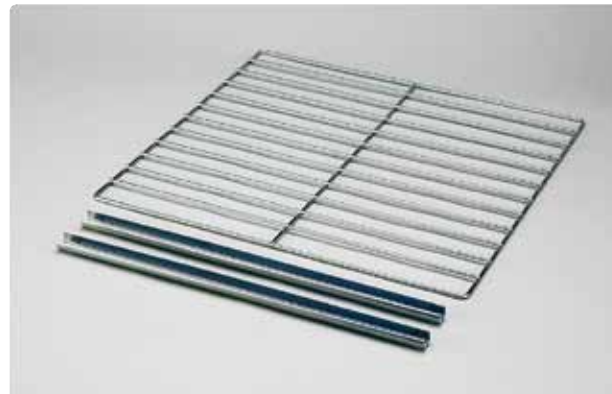


Shelf Plate

Applicable to chamber-type products



Stainless steel punched mesh plate



Stainless steel wire mesh plate

- 1 Sterilizers
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- 3 Furnaces
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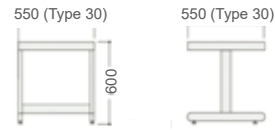
Stands

ON·ONS·OP·OH

ON30C



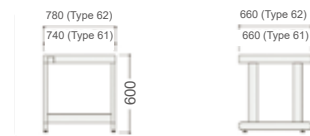
Dimension diagram (mm)



ON61C



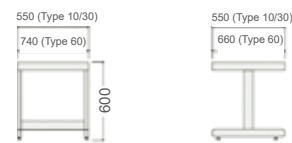
Dimension diagram (mm)



ONS10C/30C/60C



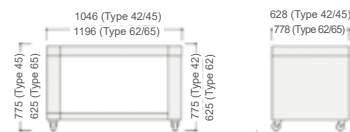
Dimension diagram (mm)



OP42C/62C, OP45C/65C



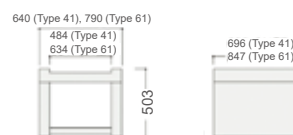
Dimension diagram (mm)



OH41C/61C



Dimension diagram (mm)



Data Loggers

SR·AL·EX·KR



Paper-based data logger (Yokogawa)

Model	SR10001	SR10002	SR10003	SR10004	SR10006
Input type	General input: thermocouple, thermistor, DC voltage, DC current				
Measurement cycle	Pen type: 125ms/channel; Dot type: 1s/6 points or 2.5s/6 points				
Calculation function	Differential calculation between channels, Linear scale, Square root, Deviation correction function				
Recording section	Effective recording width: 100mm				
Display section	LED 7-segment display (2+5 digits)				
Dimensions	W144×H144×D233				
Power supply	100-240VAC				



Paper-based data logger (CHINO)

Model	AL4706	AL4712	AL4724
Input type	General input: thermocouple, thermistor, DC voltage, DC current		
Measurement cycle	1 second/6 points, 2 seconds/12 points, 2 seconds/24 points		
Recording method	Color tape dot recording method, 6 colors		
Recording method	Effective recording width: 100mm		
Scheduled recording	Digitally records month, day, time, channel number, value, unit. Interval (h, min) can be set arbitrarily		
Dimensions	W144×H144×D222		
Power supply	100-240VAC		



Paperless data logger (Yokogawa)

Model	EX102	EX106	EX108	EX110	EX112
Input type	General input: thermocouple, thermistor, DC voltage				
Display section	5.7-inch wide viewing angle high-resolution TFT color LCD screen				
Minimum measurement cycle	125ms			1s	
Measurement/display accuracy	±0.05% of RDG (DC Voltage), ±0.15% of RDG (Thermocouple, Thermistor)				
Optional accessories	Maximum 2GB CF card, Power measurement recording, Vacuum degree recording, Flow accumulation, F0 value calculation				
Dimensions	W144×H144×D184				
Power supply	100-240VAC				



Paperless data logger (CHINO)

Model	KR2S2P	KR2S6P
Input type	General input: thermocouple, thermistor, DC voltage	
Display section	5.7-inch wide viewing angle high-resolution TFT color LCD screen	
Minimum measurement cycle	1s/6 points (100ms/4 points)	
Measurement/display accuracy	±0.1%±1 digit (with exceptions)	
External storage	CF card (capacity 256MB-8GB), standard configuration 256MB; USB drive (capacity 32M-8GB)	
Dimensions	W144×H144×D257	
Power supply	100-240VAC	

1 Sterilizers

2 Granulation and Spray Dryers

3 Furnaces

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6 Plasma Equipment

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8 Baths

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Vacuum Pumps

GLD·GCD

GLD series



Model	GLD-N051	GLD-N137	GLD-N202	GLD-N280
Geometric pumping speed	60L/min	165L/min	240L/min	336L/min
Ultimate pressure	Gas ballast valve closed: 6.7×10^{-1} Pa			
	Gas ballast valve open: 6.7 Pa			
Power supply	Single phase AC100V/220V 50/60Hz AC110V 60Hz	Single phase AC220V 50Hz, AC100V-120V 50/ 60Hz, AC200V-240V 50/ 60Hz		Single phase AC220V 50Hz
Oil used	ULVOIL R-4	ULVOIL R-7		
Required oil amount	500-800mL	1000mL	1100mL	750-1500mL
Air inlet	KF25			
External dimensions	W150×D396.5×H222.7mm	W170×D461.5×H241.1mm	W170×D489.5×H241.1mm	W181×D496.5×H269mm
Weight	14.5kg	29kg	31kg	34.5kg

GCD series



Model	GCD-051X	GCD-136X	GCD-201X
Geometric pumping speed	50L/min	135L/min	200L/min
Ultimate pressure	Gas ballast valve closed: 0.67 Pa		
	Gas ballast valve open: 6.7 Pa		
Power supply	Single phase AC220V 2.4A	Single phase AC220V 3.6A	Single phase AC220V 3.6A
Oil used	SO-M		
Required oil amount	500-800mL	1000mL	1100mL
Air inlet	KF25		
External dimensions	W165.5×D419×H222.7mm	W170×D493×H241.1mm	W170×D509.5×H241.1mm
Weight	14.1kg	25.4kg	26.6 kg

Recommended model selection table

Vacuum drying oven model	GLD series				GCD series		
	GLD-N051	GLD-N137	GLD-N202	GLD-N280	GCD-051X	GCD-136X	GCD-201X
DP23C	○				○		
DP33C	○				○		
DP43C		○	○			○	○
DP63C		○	○			○	○
DP83C				○			○
DP103C				○			○
ADP210C	○				○		
ADP310C	○				○		

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Vacuum Pumps

NeoDry

NeoDry Series



Model	NeoDry7E	NeoDry15E	NeoDry30E	NeoDry36E	NeoDry60E
Geometric pumping speed	110L/min	250L/min	500L/min	600L/min	1000L/min
Ultimate pressure	1.0Pa				
Power supply voltage	Single-phase AC220V~240V		Three-phase AC220V~240V		
Air inlet	KF25		KF40		
Exhaust vent	KF25				
Maximum water vapor processing capacity	120g/h	250g/h		350g/h	600g/h
Sound intensity	≤56dB			≤58dB	≤60dB
Weight	19kg	23kg	25kg	54kg	56kg

Recommended model selection table

Vacuum drying oven model	NeoDry series				
	NeoDry7E	NeoDry15E	NeoDry30E	NeoDry36E	NeoDry60E
DP23C	○	○			
DP33C	○	○			
DP43C	○	○			
DP63C		○			
DP83C		○	○		
DP103C		○	○		
ADP210C		○			
ADP310C		○			

1 Sterilizers

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3 Furnaces

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Vacuum Pumps

DA·DOP

DA Series



Model	DA-60D	DA-120S	DA-121DF	DA-241SF
Geometric pumping speed	60L/min	120L/min		240L/min
Ultimate pressure	3.32×10 ³ Pa	13.3×10 ³ Pa	3.3×10 ³ Pa	16.0×10 ³ Pa
Power supply	Single phase AC220V 2.4A		Single phase AC220V 2.3A	Single phase AC220V 2.5A
Inlet/outlet diameter	Outer diameter 14×Inner diameter 9 (G3/8)		Outer diameter 16×Inner diameter 12 (G1/2)	
Ambient temp.	7~40°C		0~40°C	
External dimensions	W156×D358×H238mm	W162×D358×H238mm	W193.5×D411×H241.1mm	W207×D411×H285mm
Weight	19kg		26kg	

DOP Series



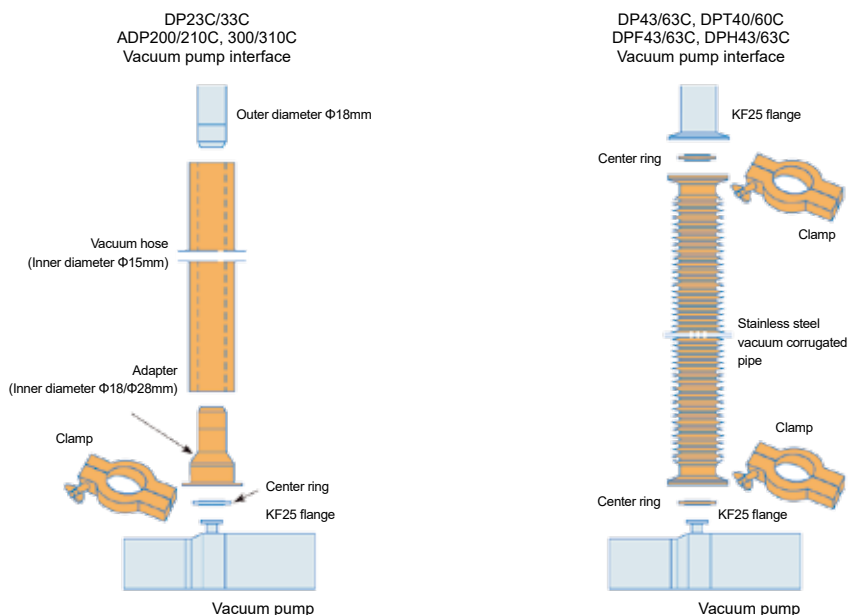
Model	DOP-181SD	DOP-301SB	DOP-400SB	DOP-420SA
Geometric pumping speed	180L/min	300L/min	400L/min	420L/min
Ultimate pressure	10.0×10 ³ Pa	8.0×10 ³ Pa	12.0×10 ³ Pa	17.3×10 ³ Pa
Power supply	Single phase AC220V 2.9A	Three-phase AC200V~230V 2.1A	Three-phase AC200V~230V 2.4A	Three-phase AC200V~230V 3.5A
Inlet/outlet diameter	Rc3/8	Outer diameter 16×Inner diameter 12 (Rc1/2)	Suitable for piping outer diameter φ16	Outer diameter 26×Inner diameter 20 (Rc3/4)
Ambient temp.	7~40°C	0~40°C		
External dimensions	W162×D266×H235mm	W315×D443×H231mm	W316×D434×H231mm	W310×D523×H253mm
Weight	12kg	20kg	23kg	33kg

Recommended model selection table

Vacuum drying oven model	DA series				DOP series			
	DA-60D	DA-120S	DA-121DF	DA-241SF	DOP-181SD	DOP-301SB	DOP-400SB	DOP-420SA
DP23C	○							
DP33C	○							
DP43C		○	○	○	○	○		
DP63C		○	○	○	○	○		
DP83C						○	○	○
DP103C						○	○	○
ADP210C	○							
ADP310C	○							

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Vacuum piping



Air Compressors

TYW-1/2



Small oil-free air compressor

Model	TYW-1	TYW-2
Start pressure	0.45MPa (0.45~0.5MPa adjustable)	
Shutdown pressure	0.75MPa	
Maximum working pressure	1MPa	
Exhaust volume	60L/min	90L/min
Air tank volume	22L	38L
Air tank size	Φ377×242	Φ406×340
Sound intensity	68dB	
Output power	550W	840W
Power supply	Single phase AC220V	

Transformers

TR10·TR20



Voltage conversion transformer (100v)

Model	TR10-1000	TR10-3000	TR10-5000
Input voltage	Single phase AC220V		
Output voltage	Single-phase AC100V (Japanese power socket)		
Rated power	1kVA	3kVA	5kVA
Output interface	Socket (universal)	Terminal block	
Safety device	Overcurrent and leakage protection circuit breaker		

Voltage conversion transformer (200v)

Model	TR20-1000	TR20-3000	TR20-5000
Input voltage	Single phase AC220V		
Output voltage	Single phase AC200V		
Rated power	1kVA	3kVA	5kVA
Output interface	Socket (universal)	Terminal block	
Safety device	Overcurrent and leakage protection circuit breaker		

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