

LAB HOUSE

SCIENTIFIC Catalogue

HOUSE



Improved and Advanced to Optimize Quality, Accuracy and Performance



LAB HOUSE Co., Ltd.

*Improved and Advanced to
Optimize Quality, Accuracy and Performance*





Improved and Advanced to Optimize Quality, Accuracy and Performance



Technology Forward

We drive our technology forward by designing producing cutting edge laboratory equipment and devices. Our aim is to provide your laboratory with the most accurate materials possible by continuously striving for perfection during our R&D.

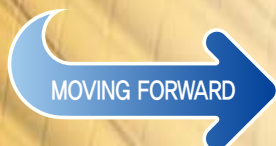


Design Forward

We believe that technology and good design can be brought together in order to achieve outstanding products. We apply this concept to our development process and produce architecturally beautiful laboratory equipment that will make your lab environment look beautiful and smart.



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건조기



NATURAL CONVECTION DRYING OVEN (자연 대류식 건조기)

The high-performance NATURAL CONVECTION DRYING OVEN with its advanced features & stylish design

**DO** series models

By using natural convection current phenomenon, this great type of drying oven features very little dust and less noise with gentle air current. So this is recommended for the experiments which need very little dust as well as suitable for drying of every kind of glassware.

Over Temperature Limit function to prevent it from going over the setting temperature.

The temperature sensor features noticing you by alarm function as well as perception of disconnection so this high performance-oriented drying oven presents you reliable experiment circumstance.

Specialized ventilation opening function to control air circulation and exhaust gas.

Chamber and door is insulated by solid heat insulator first and with this feature, it can build up ventilation structure between heat insulator and exterior cover so that external surface of the drying oven, which can be frequently contacted by human skin, maintains unarmful temperature.

Adjustable shelves to enhance end-users' convenience.

With natural convection current method, it presents ideal air flow.

Using the Digital P.I.D controller, it presents precise temperature control and auto-tuning.

GENERAL SPECIFICATIONS

Type	Natural Convection Oven
	Range : Amb $\pm 5^{\circ}\text{C}$ to 200°C (Max 250°C)
Temp	Control Sensitivity : $\pm 1^{\circ}\text{C}$
	Controller : Digital PID Controller
	Regulator : SSR Controller
Thermocouple	K (CA Type)
Timer	Range : 99hr 59min, Controller : Digital Display
	Internal Material : Stainless Steel
	External Material : Steel Plate with Powder Coating
Material	Insulation : Glass Wool
	Door Packing : High Temp. Silicone Rubber
	Shelves : Stainless Steel, (Adjustable Type)
	Window : High Temp. Safety Glass/3Glass
Safety Device	EGO. Circuit Breaker, Sensor Alarm
Power	AC 220V, 50/60Hz, 1 ϕ

Option : Program type, Recorder.

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DO-49	DO-91	DO-150	DO-250
Capacity	49 Liters	91 Liters	150 Liters	250 Liters
Internal Dimension (W x D x H) (mm)	350 x 400 x 350	450 x 450 x 450	500 x 500 x 600	500 x 500 x 1,000
External Dimension (W x D x H) (mm)	500 x 560 x 810	600 x 610 x 920	650 x 660 x 1,060	650 x 670 x 1,470
Heater Capacity	800 W	1.2 KW	1.4 KW	2.1 KW
Shelves	2 EA	2 EA	3 EA	3 EA

FORCED CONVECTION DRYING OVEN (강제 순환식 건조기 / 프로그램 타입)

The high-performance FORCED CONVECTION DRYING OVEN
with its advanced features & stylish design

**FC-PO** series models

By using the highly efficient fan motor, it circulates air inside the chamber FTFD model series by force and this operation features very fast diffusion of heat and it presents excellent distribution of temperature.

The viewing window is made of triple layers of tempered safety glass. Current temperature and setting temperature is displayed separately on the control panel.

Easy to reserve and set up your start time.

The excellent fan provides you with less noise than any other products.

Wide range of Timer control ; 0~99 hour 59 minute.

The inner surface of the chamber, which is made of Stainless Steel, enables you to experience very easy maintenance for cleanliness.

As it circulates internal air flow by force, faster drying and excellent distribution of temperature is effected.

The height adjustable shelves enable end-users to use the cabinet regardless of the size of the reagent and you can safely monitor inside the chamber.

With the elegant coordination of up-to-date design at the control board and center of the door, it presents splendid exterior design which will surely upgrade interior image of your laboratory space.

GENERAL SPECIFICATIONS

Type	Forced Convection Oven
Temp	Range : Amb $\pm 10^{\circ}\text{C}$ to 200°C (Max 250°C)
	Control Sensitivity : $\pm 0.5^{\circ}\text{C}$
	Controller : Program PID Controller 5 Pattern 18 Step
	Regulator : SSR Controller
Thermocouple	K (CA Type)
Timer	Range : 99hr 59min, Controller : Digital Display
Material	Internal Material : Stainless Steel
	External Material : Steel Plate with Powder Coating
	Insulation : Glass Wool
	Door Packing : High Temp. Silicone Rubber
	Shelves : Stainless Steel, (Adjustable Type)
	Window : High Temp. Safety Glass/3Glass
Safety Device	Over Current Circuit Breaker, sensor alarm, Door Heating Cut
Fan Motor	1/16HP
Power	AC 220V, 50/60Hz, 1 ϕ

Option : * High temp Oven(300°C , 400°C , 500°C), * Large Oven, * Clean Oven

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FC-PO-49	FC-PO-91	FC-PO-150	FC-PO-250	FC-PO-91-2	FC-PO-150-2
Capacity	49 Liters	91 Liters	150 Liters	250 Liters	91 Liters x 2 chambers	150 Liters x 2 chambers
Internal Dimension (W x D x H) (mm)	350 x 400 x 350	450 x 450 x 450	500 x 500 x 600	500 x 500 x 1,000	450 x 450 x 450 x 2 chamber	600 x 500 x 500 x 2 chamber
External Dimension (W x D x H) (mm)	520 x 560 x 810	620 x 610 x 925	670 x 660 x 1,070	670 x 660 x 1,470	1020 x 720 x 1,420	1,180 x 790 x 1520
Heater Capacity	1 KW	1.2 KW	1.4 KW	2.7 KW	2.4 KW	3.4 KW
Shelves	2 EA	2 EA	3 EA	3 EA	4 EA	6 EA

VACUUM OVEN (진공 건조기 / 프로그램 타입)

The high-performance VACUUM OVEN with excellent efficiency in making optimized distribution of heat & user-friendly control based on precise mechanism

**VH-PO** series models

With the advanced Microprocessor, it features Auto-Tuning function which results in easy and quick control.

This advanced Microprocessor-based Digital P.I.D Controller provides excellent Uniformity and Accuracy.

Reserved ON/OFF function is efficiently carried out through Timer of wide-range, 1 minute to 99 hours 59 minutes.

High-efficiency Over-Temperature Limit function fulfill reliable protection against overheating above a set temperature.

The specialized temperature sensor, which is attached closely to shelves, carry out precise control on temperature of testing substance.

Excellent heat-transmission is effected through shelves which are made of aluminium.

With the optimized structure to enhance contact-performance, the Door Gasket helps end-user start making quick vacuum operation and maximize its efficiency of vacuum.

User-friendly all-in-one type control panel

GENERAL SPECIFICATIONS

Type	Natural Convection Oven
	Range : Amb +20 °C to 150 °C (Max 200 °C)
Temp	Control Sensitivity : $\pm 3^{\circ}\text{C}$
	Controller : Digital PID Controller or LCD Program Control
	Regulator : SSR Controller
Thermocouple	PT-100 Ω
Vacuum Range	0 to 760mmHg
Timer	Range : 99hr 59min, Controller: Digital Display
	Internal Material : Stainless Steel
	External Material : Steel Plate with Powder Coating
	Insulation : Ceramic Wool, Glass Wool
	Door Packing : Silicon Rubber Packing
	Shelves : Stainless Steel
	Window : High Temp, Safety Glass 12mm
Safety Device	Over Current Circuit Breaker
Power	AC 220V, 50/60Hz 1 ϕ

Option : * High temp Oven(300°C,400°C,500°C), * Large Oven, * Clean Oven

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	VH-PO-27	VH-PO-64	VH-PO-125	VH-PO-252
Capacity	27 Liters	64 Liters	125 Liters	252 Liters
Internal Dimension (W x D x H) (mm)	300 x 300 x 300	400 x 400 x 400	500 x 500 x 500	600 x 700 x 600
External Dimension (W x D x H) (mm)	530 x 460 x 680	630 x 560 x 780	720 x 700 x 1,000	850 x 900 x 1,200
Heater Capacity	800 W	1,000 W	4 KW	6.5 KW
Shelves	2 EA	2 EA	2 EA	3 EA

배양기



GENERAL INCUBATOR (디지털 배양기)

The high-performance GENERAL INCUBATOR with its advanced features & stylish & user-friendly design

DI
series models

Convenience

Forced convection system reduces temperature difference of the chamber.

Very suitable for every kind of experiments for microbiology, cell cultivation of animals and plants and food.

With the solid double door including the inner tempered safety glass of its thickness 5mm, it enables you to easily monitor the inside of the chamber without any variation at temperature.

The excellent quality of magnetic gum packing for external door.

User-oriented design of shelves make you adjust each space of shelves without difficulty.

Round cornered chamber to protect contamination and easy to clean.

Perfect Performance

Over temperature protection, alarm, timer, and auto-tuning.

GENERAL SPECIFICATIONS

Type	Forced Convection Type
Temp	Range : Amb $\pm 5^{\circ}\text{C}$ to 60°C
	Control Sensitivity : $\pm 0.1^{\circ}\text{C}$
	Controller : Digital PID Controller
	Regulator : SSR Controller
Thermocouple	Pt-100 Ω
Timer	Range : 99hr 59min, Controller : Digital Display
Material	Internal Material : Stainless Steel Plate
	External Material : Steel Plate With Powder Coating
	Door Packing : Double Door, Magnetic Gum packing
	Inner Door : High temperature safety glass of thickness 5mm
	Shelves : ABS coating (Adjustable Type)
Safety Device	Over Temperature Limit/Over Current Glass Fuse
Supply Voltage & Frequency	AC 230V, 50/60Hz
Power	AC 220V, 50/60Hz 1 ϕ

Option : * Program type, * Recorder

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DI-49	DI-91	DI-150	DI-250	DI-91-2	DI-91-4
Capacity	49 Liters	91 Liters	150 Liters	250 Liters	91 Liters x 2 EA	91 Liters x 4 EA
Internal Dimension (W x D x H) (mm)	350 x 400 x 350	450 x 450 x 450	500 x 500 x 600	500 x 500 x 1,000	(450 x 450 x 450) x 2 EA	(450 x 450 x 450) x 4 EA
External Dimension (W x D x H) (mm)	500 x 590 x 720	600 x 640 x 820	650 x 690 x 970	655 x 690 x 1,350	610 x 740 x 1,480	1,220 x 740 x 1,480
Heater Capacity	300 W	300 W	500 W	500 W	300 W x 2 EA	300 W x 4 EA
Shelves	2 EA	2 EA	3 EA	3 EA	4 EA	8 EA

LOW TEMPERATURE INCUBATOR (저온 배양기 / 프로그램 타입)

The high-performance LOW TEMPERATURE INCUBATOR with its advanced features & stylish & user-friendly design

BIP series models**Precision Temperature Control**

Forced air circulation of chilled air by durable coaxial blower to achieve homogeneous heating and cooling dissipation throughout the chamber from 0~60°C, $\pm 0.5^{\circ}\text{C}$.

Equipped with wait-off timer, alarm, auto-tuning and temperature calibration function. Over temperature protection.

Multipurpose use

Apart from BOD incubator usage, this superior equipment also can be used as a low temperature chamber.

High level safety functions

To protect test samples from overheating, the chamber is safeguarded by control units which maintains the temperature of the chamber at the pre-set temperature in a highly precise level.

Convenience & Safety

Transparent Tempered safety inner glass door.

GENERAL SPECIFICATIONS

Type	Forced Convection Type
Temp	Range : -10°C to 60°C , Working Temp : $10\sim 60^{\circ}\text{C}$
	Control Sensitivity : $\pm 0.5^{\circ}\text{C}$
	Controller : Program PID Controller 5 Pattern 18 Step
	Regulator : SSR Controller
Thermocouple	Pt-100 Ω
Timer	Range : 99min 59sec, Controller : Digital Display
Material	Internal Material : Stainless Steel Plate
	Exterior Material : Steel Plate with Powder Coating
	Insulation : Glass Wool
	Door Packing : Double Door, Magnetic Gum packing
	Inner Door : High Temperature safety glass of thickness 5mm
	Shelves : ABS Coating (Adjustable Type)
Safety Device	Over Temperature Limit/Over Current Glass Fuse
Freezer Compressor	Air cooling unit system
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	BIP-81	BIP-150	BIP-250	BIP-81-2	BIP-81-4
Capacity	81 Liters	150 Liters	250 Liters	81 Liters x 2 EA	81 Liters x 4 EA
Internal Dimension (W x D x H) (mm)	450 x 400 x 450	500 x 500 x 600	500 x 500 x 1,000	(450 x 400 x 450) x 2 EA	(450 x 400 x 450) x 4 EA
External Dimension (W x D x H) (mm)	625 x 740 x 950	660 x 790 x 1,300	660 x 790 x 1,700	760 x 740 x 1,690	1,220 x 740 x 1,690
Heater Capacity	800 W	800 W	1 KW	600 W x 2 EA	600 W x 4 EA
Shelves	2 EA	2 EA	3 EA	4 EA	8 EA

MULTI-CHAMBER INCUBATOR (다연실 배양기)

The high-performance MULTI ROOM INCUBATOR with its advanced features & stylish & user-friendly design

**MCI** series models**GENERAL SPECIFICATIONS**

Type	Forced Convection Type
Temp	Range : Amb+5°C to 60°C/-0°C to 60°C Accuracy : $\pm 0.5^\circ\text{C}$ at 37°C, Regulator : SSR controller Controller : LCD Program PID Controller
Thermocouple	Pt-100 Ω
Timer	Range : 99hr 59min, Controller : Digital Display
Material	Internal Material : Stainless Steel plate External Material : Steel Plate with powder coating Insulation : Glass wool Door Packing : Double door. Magnetic Gum packing. Inner Door : High temp safety glass 5mm Shelves : ABS Coating (Adjustable type)
Safety Device	Over temperature limit, Over current glass fuse
Power	220V, 50/60Hz
Supply Voltage & Frequency	AC 230V, 50/60Hz
Option	* Program type, * Recorder

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DI-125-2/BIP-125-2	DI-250-2/BIP-250-2	DI-125-4/BIP-125-4
Capacity	125 Liters x 2	250 Liters x 2	125 Liters x 4
Dimensions (W x D x H) (mm)	500 x 500 x 500 x 2 R	500 x 500 x 1000 x 2 R	500 x 500 x 500 x 4 R
Heater Capacity	400 W x 2 EA / 800 W x 2 EA	1,000 W x 2 EA / 800 W x 2 EA	400 W x 4 EA / 700 W x 4 EA
Shelves	2 EA x 2 R	3 EA x 2 R	2 EA x 4 R

DIGITAL COLONY COUNTER (세균 계수기)

This counter feature just touch the petri dish with any Marker to achieve the counting mechanism. Counter confirms each mark with an audible signal.

**CC** series models**INDIVIDUAL SPECIFICATIONS PER MODEL**

MODEL	CC-10	
Readout	4 Digital LED Display	
Petri dish	Sensor Max. 150 mm	
Illumination	Fluoresent Lamp	
Dimension (L x D x H) (mm)	390 x 290 x 100	
Power	AC 220V, 50/60Hz	
STANDARD ACCESSORIES		
1.5 x Auxiliary	1 EA	Marking pen probe 1 EA
Adjustable focussing arm	1 EA	10 cm Dish holder
Needle-point probe	1 EA	

SHAKING INCUBATOR (진탕 배양기)

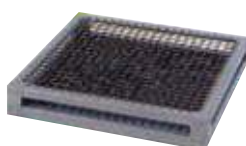
The optimum performance SHAKING INCUBATOR with its proven features & stylish design



OPTIONAL ACCESSORIES



Plate of flask



Spring rack



SI series models

Feature

- ☐ Brushless DC Motor
- ☐ Safety Device.
- ☐ Universal spring rack (Option)
- ☐ Shaking Orbital Motion
- ☐ Digital PID Controller

GENERAL SPECIFICATIONS

Temp Controller	Digital PID controller
Speed Range	10~350 RPM
Display	LED Display
Drive System	Beltless direct drive
Motor	Brushless DC Motor K-type
Circulation Fan	3.5" convection Fan x 2 EA
Lid	Acrylic Blue
Safety Device	Over temp. Protector, Door Detector
Standard Plate	250 mL (Flask) x 16 EA

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	SI-87/SI-87R	SI-121/SI-121R	SI-220/SI-220R
Temp Range	FTSH type : Amb+5°C to 60°C		
	FTSH-L type : 15°C ~ 60°C		
Internal Dimension (W x D x H) (mm)	510 x 430 x 380	550 x 500 x 450	790 x 650 x 450
External Dimension (W x D x H) (mm)	520 x 700 x 520	780 x 680 x 910	1020 x 820 x 910

OPTIONAL ACCESSORY

(MODEL)FLASK	SI-87	SI-121	SI-220
100 mL	25 EA	36 EA	60 EA
250 mL	16 EA	25 EA	40 EA
500 mL	9 EA	16 EA	24 EA
1000 mL	4 EA	9 EA	15 EA
Spring Rack	387 x 375 mm	480 x 430 mm	720 x 600 mm
Plate	385 x 375 mm	480 x 430 mm	720 x 600 mm

CO₂ INCUBATOR (CO₂ 인큐베이터)

The high-performance CO₂ INCUBATOR with its advanced features & stylish design



Two stage Regulator

OPTION

- ☐ Two stage Regulator.
- ☐ CO₂ Analyzer
- ☐ O₂ Analyzer
- ☐ HEPA Filter
- ☐ UV Lamp
- ☐ PC Based data logger

CI series models**Feature**

- ☐ Setting Value is shown on the LCD.
- ☐ Operating status is shown on the LED.
- ☐ Water Jacket that can be kept TEMP well.
- ☐ Infra-red Sensor (Exact nondispersive Dual Beam)
- ☐ Standard size (Various use purpose)
- ☐ Double Stack (Saving space)
- ☐ Round corner manage for protection of pollution.
- ☐ Safety device (Gas Monitor, Protector for Overheat, Water Level Alarm)

SPECIFICATIONS

MODEL	CI-33
Temperature Control	Digital PID Controller
Temperature Range	Ambient $\pm 5^{\circ}\text{C}$ to 50°C , $\pm 0.1^{\circ}\text{C}$ at 37°C
CO ₂ Range	0 to 20%, $\pm 0.1\%$ at 5%
CO ₂ Sensor	Dual-Beam Non dispersive Infra-red sensor
Humidification	Up to 96% RH at 37°C
Display	Dual Display, Set-LCD & Run-LED
Dimension	Internal Dimension : 320 x 300 x 340 mm (WxDxH), External Dimension : 410 x 410 x 540 mm (WxDxH)
Capacity	33 Liters
Materials	Internal Material: Stainless Steel, External Material: Steel Plate With Powder Coating
Water Jacket Volume	11 Liters
Door	Double, Silicone magnetic packing door
Inner door	Safety glass door with U-groove packing
Door Heater	Silicone heater Independent control
Shelves	3 EA. Stainless steel plate, adjustable type
Safety device	High Temp, protector, Gas monitor alarm Water level monitor, Power breaker,
Utility	Sample port, access hole, drain port
Net Weight	40 kg
Power	220V, 1.2A, 60Hz

CO₂ INCUBATOR (CO₂ 인큐베이터)

The high-performance CO₂ INCUBATOR with its advanced features & stylish design



Two stage Regulator

OPTION

- ☐ Two stage Regulator.
- ☐ CO₂ Analyzer
- ☐ O₂ Analyzer
- ☐ HEPA Filter
- ☐ UV Lamp
- ☐ PC Based data logger

CI series models**Feature**

- ☐ Setting Value is shown on the LCD.
- ☐ Operating status is shown on the LED.
- ☐ Water Jacket that can be kept TEMP well.
- ☐ Infra-red Sensor (Exact nondispersive Dual Beam)
- ☐ Standard size (Various use purpose)
- ☐ Double Stack (Saving space)
- ☐ Round corner manage for protection of pollution.
- ☐ Safety device (Gas Monitor, Protector for Overheat, Water Level Alarm)

SPECIFICATIONS

MODEL	CI-173
Temperature Control	Digital PID Controller
Temperature Range	Ambient $\pm 5^{\circ}\text{C}$ to 50°C , $\pm 0.1^{\circ}\text{C}$ at 37°C
CO ₂ Range	0 to 20%, $\pm 0.1\%$ at 5%
CO ₂ Sensor	Dual-Beam Non dispersive Infra-red sensor
Humidification	Up to 96% RH at 37°C
Display	Dual Display, Set-LCD & Run-LED
Dimension	Internal Dimension : 510 x 480 x 705 mm (W x D x H)
	External Dimension : 605 x 610 x 990 mm (W x D x H)
Capacity	173 Liters
Materials	Internal Material : Stainless Steel
	External Material : Steel Plate With Powder Coating
Water Jacket Volume	34 Liters
Door	Double, Silicone magnetic packing door
Inner door	Safety glass door with U-groove packing
Door Heater	Silicone heater Independent control
Shelves	3 EA. Stainless steel plate, adjustable type
Safety device	High Temp, protector, Gas monitor alarm
	Water level monitor, Power breaker,
Utility	Sample port, access hole, drain port
Net Weight	98 kg
Power	220V, 1.2A, 60Hz

수조



DIGITAL WATER BATH (디지털 항온수조)

The high-performance DIGITAL WATER BATH with its advanced features & user-friendly design

DWB series models

This distinguished FTWB model series of Digital Water Bath are openly recognized by our worldwide end-users as the most suitable & high-efficiency equipment for a large variety of laboratories that carry out industrial, pharmaceutical, clinical and biomedical experiments which need accuracy and uniformity with temperature control.

**SPECIFICATIONS**

Type	Natural Type
Temp	Range : Amb +5°C to 98°C
	Accuracy : $\pm 1^{\circ}\text{C}$
	Controller : Digital PID Controller
	Regulator : SSR Controller
Thermocouple	PT-100 Ω
Timer	Range : 99hr 59min
	Controller : Digital Display
Material	Internal Material : Stainless Steel Plate
	External Material : Steel Plate with Powder Coating
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DWB-11	DWB-22
Capacity	11 Liters	22 Liters
Bath Dimension (L x D x H) (mm)	300 x 250 x 150	500 x 300 x 150
External Dimension (L x D x H) (mm)	330 x 275 x 290	530 x 330 x 290
Heater Capacity	1,000 W	1,600 W

CIRCULATOR WATER BATH / OIL BATH (순환식 항온수조 / 오일 수조)

This advanced FTCWB model series of Bath Circulator is openly recognized by our worldwide end-users as the most suitable & high-efficiency equipment for a large variety of laboratories that carry out industrial, pharmaceutical, clinical and biomedical experiments which need accuracy and uniformity with temperature control.

CWB, COB series models**CWB-Type****OIL BATH**

The advanced Digital PID Controller provides excellent Uniformity and Accuracy.

With the high-powered Circulation Pump, it comes with enhanced temperature uniformity that enables this superior Bath Circulator to circulate water (liquid) internal and external part.

With the advanced monolithic construction of the solid bath which is made of stainless steel, it features solid durability as well as elegant external appearance.

Excellent-performance Digital PID controller features Auto-tuning function to successfully enhance end-user's easy and quick control.

To protect overheating above setting temperature, excellent-performance Over

Temperature Limit function can be automatically operated for safety.

In case of sudden stoppage of power electricity that end-users do not perceive, end-users can select whether operation should be continued or not.

In case that its sensor perceive low water level while operating, audible alarm sounds and it automatically suspend every operation.

The easy-to-see control panel displays current temperature and set temperature simultaneously and this feature enables end-users to check current operational state and see whether any wrong operation happens or not.

Very ideal for industrial, pharmaceutical, clinical and biomedical experiments which need precision temperature control.

Very easy Auto-tuning function features the most strong point to enhance end-users' convenience.

Spring wire rack is made of stainless steel of enhanced elasticity and with this wire rack, end-users can easily adjust its height to install every different-sized test container (Optional).

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	CWB-11/COB-11	CWB-22/COB-22
Capacity	11 Liters	22 Liters
Bath Dimension (L x D x H) (mm)	300 x 250 x 150	500 x 300 x 150
External Dimension (L x D x H) (mm)	330 x 270 x 400 / 350 x 300 x 400	540 x 330 x 400 / 550 x 350 x 400
Heater Capacity	1 KW / 2 KW	2 KW / 2.8 KW

GENERAL SPECIFICATIONS

Type	Forced Convection Type
Temp	Range : Amb +5°C to 98°C (COB type : 200°C) Accuracy : $\pm 0.5^\circ\text{C}$ Controller : Digital PID Controller Regulator : SSR Controller
Thermocouple	PT-100 Ω
Timer	Range : 99hr 59min, Controller : Digital Display
Material	Internal Material : Stainless Steel Plate Exterior Material : Steel Plate with Powder Coating
Pump Capacity	8 Liters/min
Safety Device	Over Temperature Limit, Over temp protector/Low Water Level
Supply Voltage & Frequency	AC 230V, 50/60Hz

SHAKING WATER BATH (진탕 항온수조)

The high-performance SHAKING WATER BATH with its advanced features & user-friendly design

SHWB series models

This distinguished FTSWB model series of Shaking Water Bath are openly recognized by our worldwide end-users as the most suitable & high-efficiency equipment for a large variety of laboratories that carry out industrial, pharmaceutical, clinical and biomedical experiments which need accuracy and uniformity with temperature control.

**GENERAL SPECIFICATIONS**

Temp	Range : Amb + to 95°C
	Accuracy : $\pm 0.1^{\circ}\text{C}$ at 37°C
	Controller : Digital PID Controller
Timer	Sensor : PT-100Q
	Range : 99hr 59min
Material	Controller : Digital Display
	Bath (in) : Stainless Steel
	External Material : Steel Plate with Powder Coating
Speed	Heater : Stainless Steel
	Range : 50~200rpm
Stroke	Control : Digital Display
	Range : 15~20mm
Standard Plate	Spring Rack
Shaking Motion	Reciprocal
Safety Device	Over Current Circuit Breaker
Motor	DC Motor
Power	AC 220V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	SHWB-30	SHWB-45
Capacity	30 Liters	45 Liters
Bath Dimension (L x D x H) (mm)	500 x 300 x 250	600 x 300 x 300
External Dimension (L x D x H) (mm)	690 x 340 x 320	790 x 340 x 370
Heater Capacity	2 KW	2.5 KW

REFRIGERATED CIRCULATOR BATH / MINI BATH (저온 항온수조 / 미니 순환 냉각기)

The high-performance REFRIGERATED CIRCULATOR BATH / MINI BATH
with its advanced features & stylish design for every diversified users in the world

RBC, VB series models



MINI BATH



Feature

- ☐ Convenient to use on a table.
- ☐ External circulation function with the powerful circulation pump.
- ☐ Control the optimum temperature with PID Auto-turning control function.
(LCD Program PID Controller <1 pattern 10 segment>)
- ☐ Excellent safety with heater cut-off function without water.
- ☐ Low noise level for the operation in a sealed space.
- ☐ Separate power switched for the boh function of freeze and circulation water way.
- ☐ Safety apparatus for the electric leakage and excess.

GENERAL SPECIFICATIONS

Temp	Range : -20°C~100°C
	Controller : LCD Program PID Controller (10 Segment)
	Sensor : PT-100Ω
Timer	Range : 99Hr 59Min
	Controller : LCD Digital Display
Material	Internal Material : Stainless Steel
	External Material : Steel Plate with Powder Coating
	Heater : Stainless Steel
	Insulation : poly urethane Foam
Pump Capacity	7 Liter/Min
Refrigerator	Air Cooling Unit System
Safety	Over Temp Protector, Low Level Switch
Power	AC 220V, 60Hz, 1Ø
Option : * -40°C, -60°C, -80°C	

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	RBC-9	RBC-22	VB-7
Capacity	9 Liters	22 Liters	7 Liter
Internal Dimension (W x D x H) (mm)	300 x 200 x 150 (150 x 200 x 150)	500 x 300 x 150 (350 x 300 x 150)	310 x 155 x 150 (140 x 155 x 150)
External Dimension (W x D x H) (mm)	350 x 270 x 710	550 x 350 x 750	350 x 495 x 420
Heater Capacity	1.5 KW	1.5 KW	1.5 KW

COLD TRAP (저온 동결트랩)

The optimum performance COLD TRAP with user-friendly functions & excellent construction to maximize effectiveness of your invaluable test process

CT series models**Feature**

- ☐ LED Temperature display
- ☐ Low noise during the operation
- ☐ Removable venting grid for easy cleaning to maintain cooling function.
- ☐ The ideal low Temperature cold trap condensation of vapor and harmfulness substance from vacuum line

Safety

- ☐ Dry running protection
- ☐ Protection from excess electric current
- ☐ Water level sensor(option)

Application

- ☐ Evaporators, vacuum pump protection
- ☐ Humidity removal, Solvent removal
- ☐ Volatile organic compound removal

**GENERAL SPECIFICATIONS**

	Range : -40°C, (Option : -60°C, -80°C)
Temperature	Controller : Digital PID-A controller
	Sensor : pt 100Ω
Materials	Internal Material : Stainless Steel (SUS 304)
	Exterior Material : Steel Plate, 1.2 t Double, painted & baked
	Insulation : Polyurethane foam 20mm
Safety Device	Over current & Leakage current switch
Power	AC 220V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	CT-4.8G
Type	Glass or Metal Trap
Bath Volume	4.8 Liters
Dimensions (Bath) (mm)	200 x 220
Dimensions (Overall) (L x D x H) (mm)	355 x 380 x 755
Refrigerator	450 W
Weight	45.0 kg

SOXHLET WATER BATH (COD Bath) (추출 항온수조)

The high-performance SOXHLET WATER BATH
with its advanced features & stylish design for every diversified users in the world

SWB-D series models**Feature**

- ☐ LED display
- ☐ Opening ring, Frame, Clamp

**GENERAL SPECIFICATIONS**

Temp	Control : Digital PID controller
	Range : Ambient +5°C ~ 98°C
	Regulator : SSR Type
Thermocouple	pt 100Ω
Materials	in : Stainless Steel Plate
	ex : Steel plate with powdercoated
Top opening Dia.	Ø 110 mm (Ring cover)
Accessories	Stand, Clamp Holder
Power	AC 220 V, 1Ø 50/60Hz

**INDIVIDUAL SPECIFICATIONS PER MODEL**

MODEL	SWB-D-4	SWB-D-6
Type	4 Hole opening type	6 Hole opening type
Internal Dimension (W x D x H) (mm)	330 x 320 x 100	890 x 150 x 100
External Dimension (W x D x H) (mm)	360 x 330 x 210	950 x 250 x 210
Heater Capacity	1 kw	2 kw

전기로 / 기타 이화학기기



MUFFLE FURNACE (보급형 전기로)

This product is used for various purposes such as the development of new materials, including industrial and biotechnology products are being used as the basis of a common laboratory equipment. heat treatment, melting of the glass, melting the metal and casting molding

DMF series models**Feature**

- ☐ This product is suitable for the purpose of the experiment in Figure 800 °C below.
- ☐ Sensor alarm function.
- ☐ Temperature agent P.I.D use of the control method.
- ☐ Additional heat is derived directly molded on Ceramic Fiber located on the left and right side.
- ☐ Auto-tuning function
- ☐ Temperature Compensation

Option

- ☐ Forced exhaust system
- ☐ Oxygen, nitrogen, an inert gas that can flow
- ☐ Program type, RS-232C function, communication function, PC control function.
- Heat-resistant Gloves, Crucible, Crucible Tongs, Ceramic Fiber Plate

**GENERAL SPECIFICATIONS**

Temp Range:	Max. 850 °C
Working Temp:	300 ~800 °C
Temp control:	Digital PID controller
Timer:	99hr 59min
Sensor:	K-type
Insulation:	Ceramic Fiber
Heater:	Kanthal A1
Power:	AC 220V, 1Ø,50/60 Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DMF-3T	DMF-5T
Internal Dimension (L x D x H) (mm)	130 x 220 x 110	150 x 260 x 130
External Dimension (L x D x H) (mm)	300 x 370 x 420	320 x 410 x 440
Heater	1.1 KW	1.5 KW
Capacity	3 Liter	5 Liter
Weight	18 kg	21 kg

MUFFLE FURNACE (전기로)

This product is used for various purposes such as the development of new materials, including industrial and biotechnology products are being used as the basis of a common laboratory equipment. heat treatment, melting of the glass, melting the metal and casting molding

DMF, PMF series models



(P Type)



Feature

- ☐ This product is suitable for the purpose of the experiment in Figure 1000°C below.
- ☐ When the door opens, interrupting the power supply to the safety of the heater.
Safety door lock is blocked, the sensor alarm functions, independent overheating protector attached.
- ☐ Auto-tuning function, Temperature Compensation

Option

- ☐ Forced exhaust system
- ☐ Flow meter
- ☐ Program type, RS-232C function, communication function, PC control function.
Heat-resistant Gloves, Crucible, Crucible Tongs, Ceramic Fiber Plate

GENERAL SPECIFICATIONS

Temp Range	Max. 1100 °C
Working Temp	300 ~1000 °C (Option : 1100 °C or 1150 °C)
Temp control	Digital PID controller program type(5Pattern 18 segment)
Timer	99hr 59min
Thermocouple	K-type
Materials	Internal-Ceramic Fiber, External-Steel plate with powder coating.
Insulation	Ceramic Fiber/ceramic board
Heater	Kanthal A1, 4-side Heating
Safety Device	Over temp/Current protection, Sensor error detection Safety switch for opening.
Power	AC 220V, 1Ø, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DMF-3	DMF-4.5	DMF-12	DMF-14	DMF-27	DMF-64
(program)	PMF-3	PMF-4.5	PMF-12	PMF-14	PMF-27	PMF-64
Capacity	3 Liters	4.5 Liters	12 Liters	14 Liters	27 Liters	64 Liters
Internal Dimension (L x D x H) (mm)	130 x 250 x 90	150 x 300 x 100	200 x 300 x 200	250 x 350 x 160	300 x 300 x 300	400 x 400 x 400
External Dimension (L x D x H) (mm)	390 x 480 x 550	420 x 540 x 570	480 x 550 x 680	530 x 600 x 640	580 x 590 x 780	1000 x 720 x 870
Heater capacity	1.4 KW	1.7 KW	3.4 KW	4 KW	4.6 KW	9 KW
Net weight	30 kg	35 kg	40 kg	55 kg	60 kg	80 kg
Power	AC 220 V, 1Ø, 50/60 Hz					

HIGH TEMPERATURE FURNACE (고온 전기로)

This product is used for various purposes such as the development of new materials, superconducting materials experiment, ceramic sintering, heat treatment, melting of the glass, melting the metal and casting molding

SF, MSF series models

Aluminium Profile Case

Feature

- ☐ High temperature test up to 1600°C
- ☐ High performance heat insulation by the molded ceramic block and quick reach to high temp.
- ☐ The grounded circuit and NFB prevent a short circuit and over current of electricity. Fuse change is not required.
- ☐ Stable standing with uniquely designed leveling foot.
- ☐ Double doors prevent exterior heating and provide the safety for the operators.
- ☐ Vacuum-formed ceramic fiber with high performance durability.

Option

- ☐ LCD program controller
- ☐ RS-232C
- ☐ Aluminium Profile Case

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	SF-4.5	SF-11	SF-22	MSF-4.5	MSF-11	MSF-22
Temp Range	Max. 1450°C			Max. 1650°C		
Working Temp.	500 ~ 1400°C			500 ~ 1600°C		
Temp control	Microprocessor program controller(2 pattern 10 segment)			Microprocessor program controller(2 pattern 10 segment)		
Thermocouple	R-type			B-type		
Output Regulator	SCR unit controller			SCR unit controller		
Heating element	SiC Rod			Mosi2 Heater		
Heater Capacity	3.3 KW	7.7 KW	9.6 KW	2.9 KW	6.6 KW	9.5 KW
Capacity	4.5 Liter	11 Liter	22 Liter	4.5 Liter	11 Liter	22 Liter
Insulation	Ceramic Board(1600°C, 1400°C, 1200°C)			Ceramic Board(1800°C, 1600°C, 1200°C)		
Internal Dimension (L x D x H) (mm)	150 x 200 x 150	200 x 270 x 200	250 x 350 x 250	150 x 200 x 150	200 x 270 x 200	250 x 350 x 250
External Dimension (L x D x H) (mm)	820 x 560 x 660	870 x 630 x 730	920 x 710 x 850	920 x 610 x 770	980 x 680 x 840	1050 x 750 x 910
Power supply	AC 220V, 1 Ø 50/60Hz			AC 220V, 1 Ø 50/60Hz		

TUBE MUFFLE FURNACE (튜브 전기로)

This product is used for various purposes such as the development of new materials, including industrial and biotechnology products are being used as the basis of a common laboratory equipment. heat treatment, melting of the glass, melting the metal and casting molding

TF
series models

Option

- ☐ Temp Range : 1150℃(kanthal A1), 1400℃(SiC), 1600℃(Mois2)
- ☐ RS-232C
- ☐ LCD Program controller.
- ☐ Quartz tube/ Mask(1set- Aluminium)
- ☐ Flow meter



GENERAL SPECIFICATIONS

Temp Range	Max. 1200°C
Working Temp	1000°C
Temp control	Digital PID controller (OPTION : PROGRAM TYPE)
Timer	99hr 59min
Sensor	CA, K-type
Insulation	Ceramic Fiber
Heater	Kanthal A1
Power	AC 220V, 1Ø,50/60 Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DTF- 803/806	DTF- 1203/1206	DTF- 1603/1606
Size	Ø80 x 300 mm/Ø80 x 600 mm	Ø120 x 300 mm/Ø120 x 600 mm	Ø160 x 300 mm/Ø160 x 600 mm
Tube Range	Not exceeding 60Ø	Not exceeding 100Ø	Not exceeding 140Ø
External Dimension (L x D x H) (mm)	400 x 310 x 470/700 x 310 x 470	400 x 370 x 530/700 x 370 x 530	400 x 430 x 590/700 x 430 x 590
Heater	1.8 KW/3.2 KW	2.2 KW/4.5 KW	3.2 KW/6.2 KW

HIGH TEMP TUBE FURNACE (고온 튜브 전기로)

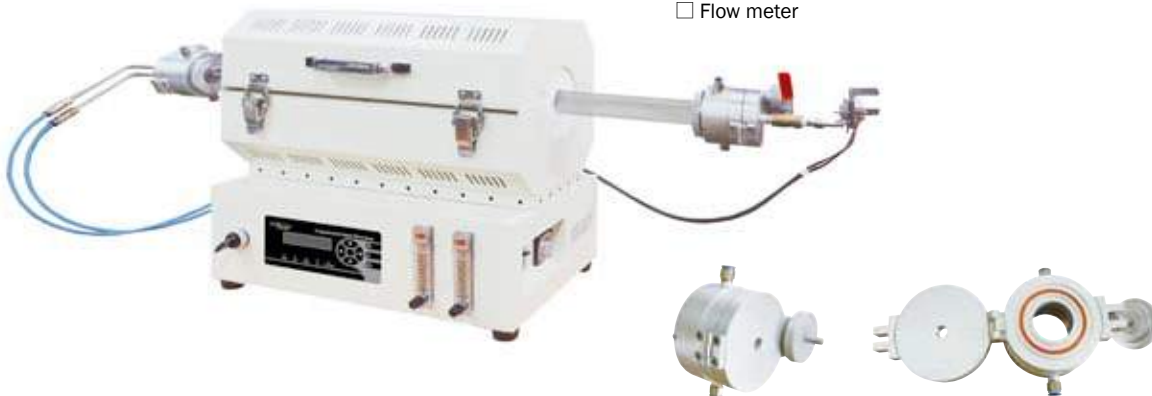
This product is used for various purposes such as the development of new materials, including industrial and biotechnology products are being used as the basis of a common laboratory equipment. heat treatment, melting of the glass, melting the metal and casting molding

STF, MTF series models**Feature**

- ☐ Durable Molded ceramic fiber insulated chamber.
- ☐ Embedded heating element.
- ☐ Microprocessor Digital PID controller or Program controller
- ☐ Exhausted Gas outlet port installed on the top

Option

- ☐ RS-232C
- ☐ LCD Program controller.
- ☐ Quartz tube/ Mask(1set- Aluminium)
- ☐ Flow meter

**GENERAL SPECIFICATIONS**

Temp Range	Max. 1450°C(1650°C -MTF series)
Working Temp	400 ~ 1400°C(500 ~ 1600°C)
Temp control	LED Program PID controller(2 pattern 10 segment)
Timer	99hr 59min
Sensor	R-type, B type
Insulation	Ceramic Board(1600°C, 1400°C, 1200°C) Ceramic Board(1800°C, 1600°C, 1200°C -MTF series)
Heater	SiC Heater (Mosi2 Heater)
Safety device	Over Temp protector, Power Breaker
Power	AC 220V, 1Ø, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	STF- 803/806	STF- 1203/1206	STF- 1603/1606
Size	Ø80 x 300 mm/ Ø80 x 600 mm	Ø120 x 300 mm/ Ø120 x 600 mm	Ø160 x 300 mm/ Ø160 x 600 mm
Tube Range	Not exceeding 60Ø	Not exceeding 100Ø	Not exceeding 140Ø
External Dimension (L x D x H) (mm)	530 x 530 x 860/ 830 x 530 x 860	530 x 580 x 900/ 830 x 580 x 900	530 x 600 x 940/ 830 x 600 x 940
Heater	2.8 KW/5.6 KW	6.4 KW/10 KW	8.9 KW/13 KW

Temp Range : 1600°C (Heater : Mosi2)

MTF-803/806	MTF-1203/1206	MTF-1603/1606
Ø80 x 300 mm/ Ø80 x 600 mm	Ø120 x 300 mm/ Ø120 x 600 mm	Ø160 x 300 mm/ Ø160 x 600 mm
Not exceeding 60Ø	Not exceeding 100Ø	Not exceeding 140Ø
690 x 550 x 980/ 990 x 550 x 980	690 x 595 x 1070/ 990 x 595 x 1070	690 x 635 x 1110/ 990 x 635 x 1110
3.3 KW/6.6 KW	4.5 KW/9 KW	5.5 KW/11 KW

ELEVATOR MUFFLE FURNACE (엘리 베이터 전기로)

Automatic operated elevator provides for smooth loading and unloading of samples by up and down movement.

EMF series models**Feature**

- ☐ Durable Molded ceramic fiber insulated chamber.
- ☐ Embedded heating element.
- ☐ Microprocessor Digital PID controller or Program controller
- ☐ Exhausted Gas outlet port installed on the top

Option

- ☐ Temp Range : 1150℃(kanthal A1), 1400℃(SiC), 1600℃(Mois2)
- ☐ RS-232C
- ☐ LCD Program controller.

GENERAL SPECIFICATIONS

Temp Range	Max. 1100℃
Working Temp	300 ~ 1000℃
Temp control	Digital PID controller/LCD Program controller.
Timer	99hr 59min
Thermo couple	K-type
Output Regulator	SSR unit controller
Insulation	Ceramic Board/Ceramic Fiber
Heating element	Kanthal A1(exposure)
Safety Device	Over Temp protector, Power breaker
Power	AC 220V, 1Ø, 50/60 Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DEMF-3.5/PEMF-3.5
Internal Dimension (L x D x H) (mm)	140 x 140 x 180
External Dimension (L x D x H) (mm)	400 x 500 x 970
Heater Capacity	2.2 KW
Chamber Capacity	3.5 Liter
Power Supply	AC 220V, 1Ø, 50/60 Hz

DESK TOP STERILIZATION (탁상형 멸균기)

The optimum performance DESK TOP STERILIZATION with user-friendly functions & excellent construction to maximize effectiveness of your invaluable test process

AC series models

- ☐ Full Automatic : Possible to use for Full Automatic only Button by USER
- ☐ Auto - Drain : Auto drain system when the power failed.
This is for safety of User.
- ☐ LED Display : Easy use methods, Single glance of working process as LED Display
- ☐ User Mode : Ease choice for Sterilization Temperature, Sterilization time & Drying Time
- ☐ Door : One touch methods
- ☐ Safety Device : Safety Devices for Over Temperature, Over pressure, Door close device & Electric problems.
- ☐ Self-Test Function : Error cord sign in the display as self-test function In the working processing
- ☐ Gasket : Long Life gasket By Exhaustive design



mini

GENERAL SPECIFICATIONS

Temp range	121°C, or 132°C,
Pressure range	0 ~ 2.1 kgf/cm ²
Sterilizer time	60 min(Max)
Control system	8 Bit Microprocessor
Safety device	Over temp protector, safety valve
Power	AC 220V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL		AC-25D	AC-50D	AC-80D
Overall Size (W x H x D) (mm)		535 x 620 x 430	620 x 710 x 520	620 x 1000 x 1290
Chamber	Size	Ø 260 x 460 mm	Ø 350 x 5100 mm	Ø 350 x 800 mm
	Capacity	25 Liters	50 Liters	80 Liters
	Materials	Stainless Steel (SUS 304)	Stainless Steel(SUS304)	Stainless Steel(SUS304)
	Type	Cylindrical type	Cylindrical type	Cylindrical type
Tray	Size	190 x 400 x 25 mm	240 x 480 x 30 mm	240 x 770 x 30 mm
	Materials	Aluminium		
Reservoir capacity		4.5 Liters	4.5 Liters	8 Liters
Heater capacity		2.0 KW	2.0 KW	2.5 KW
Weight		48 kg	65 kg	100 kg

AUTOCLAVE (고압 멸균기)

The fully-automated AUTOCLAVE with excellent efficiency in sterilizing materials, such as glassware & etc, in the field of biochemistry, biotechnology, microbiology & other related-sector.

AC series models



Only initial & simple setting enables end-users to effectively operate our high-performance Autoclave with fully-automated process for easy & quick control. Time for sterilization can be easily adjusted by user-friendly control system. When setting time for sterilization ends up, buzzer sound comes together with automatic exhaust of steam inside the equipment. The advanced dual safety system makes optimized protection against any kind of dangerous factors which may be caused by excessive upturn of temperature & pressure. High-efficiency Over-Temperature Limit function fulfill reliable protection against overheating above a set temperature. User-friendly control panel enables end-users to take a look at both setting & present temperature. When it comes up to a end-user's setting temperature for sterilization, the timer is automatically activated and both operating temperature & progress time of sterilization temperature are shown on the display for easy monitoring. The safety devices present effective protection functions against overheating and overcurrent. User-friendly all-in-one type control panel. When it comes up to a end-user's setting time for sterilization, buzzer is automatically activated and in case of a sudden stoppage of power supply, automatic return function is also activated. Using the solidly-made four-arm locker, it features easy & quick operation with the completely-isolated structure from the outside of the equipment.

GENERAL SPECIFICATIONS

Temp	Range : Amb +10 °C to 125 °C
Display	Controller : Digital PID controller 5 Patterm 18 segment PV & SV Dual Digital Display
Time	99hr 59min 59sec
Pressure Gauge	0~3 kg/cm2
Operating Pressure	1.2 kg/cm2 at 121 °C (Degrees of Celcius)
Door Packing	One Touch Pressure Handle Type
Safety System	Over Temperature, Over Pressure and Over Current Protector
Basket	Standard Wire Basket (Included in Every Unit of Model)
Supply Voltage & Frequency	AC 230V, 50/60Hz

Option : RECORDER

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DAC-40/PAC-40	DAC-60/PAC60	DAC-80/PAC80	DAC-100/PAC-100
Capacity	40 Liters	60 Liters	80 Liters	100 Liters
Internal Dimension (W x D x H) (mm)	Ø300 x 650	Ø350 x 650	Ø400 x 650	Ø450 x 650
External Dimension (W x D x H) (mm)	670 x 520 x 1,090	670 x 520 x 1,090	750 x 600 x 1,090	850 x 650 x 1,090
Heater Capacity	2 KW	3 KW	4 KW	5 KW

LAMINAR FLOW CLEAN BENCH (크린벤치)

(HORIZONTAL AIR FLOW TYPE)



CBH-Type



SUCTION PUMP

MODEL	MS-33 Portable type
Motor	Oil-less piston vacuum pump
on/off s/w	Toggle/Foot type
Flow rate	35 L/min
Power	Ac 220V, 60Hz, 150W

CBH, SCBH series models

This is very necessary equipment to provide you with antiseptic work condition. FTCBH model series is very suitable for the place where needs cleanness work like medical science, pharmacy, agriculture, new composition and electrical industry field.

It is used for various works that require maintenance of the cleanness and purity like plant tissue culture, examination and, experimentation of precision electronic parts, medical science, pharmacy, agriculture sector and the like.

The highly efficient HEPA filter is installed in the FTCBH series and it maintains the optimum cleanness and purity.

Being equipped with the Prefilter, it can extend the life of HEPA filter and protect it from pollution.

LCD Microprocessor automatically alarms when filter needs to be changed.

Built-in velocity controller features outstanding suitability to any circumstance.

The solid door is made of high-class tempered glass and this special feature enables end-users to easily monitor inside the workzone with efficient protection function to prevent end-users from ultraviolet rays.

GENERAL SPECIFICATIONS

Main Filter	HEPA Filter
Prefilter	High-efficiency nylon filter 3~30 micron
Purity	Class 100
Air Velocity	0.3~0.5m/sec (9-phase controllable)
Efficiency	0.3um, particle time, removal 99.99% or 99.97%
Illumination	Fluorescent Lamp 40W or 20W
Sterilizing	UV Lamp 40W or 20W
Controller	9 stage velocity controlle, Total using time, UV/FL Lamp ON/OFF
Materials	Internal Material: Stainless Steel Plate
	Exterior Material: Steel Plate with Powder Coating
	Window: High Temperature safety glass of thickness 5mm
Door	Sliding Glass Door/Tempered Safety Glass
Utility	Air Cock, Gas Cock, Electric Outlets (AC 220V x 1ea & 110V x 1ea)
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	CBH-900/SCBH-900	CBH-1300/SCBH-1300	CBH-1600/SCBH-1600	CBH-1800/SCBH-1800
External Dimension (L x D x H) (mm)	900 x 800 x 1,920	1,300 x 800 x 1,920	1,600 x 800 x 1,920	1,800 x 800 x 1,900
Type	Horizontal Type	Horizontal Type	Horizontal Type	Horizontal Type

CLEAN BENCH (크린벤치)

The high-performance CLEAN BENCH with its advanced features & stylish & user-friendly design



CBB-Type

**SUCTION PUMP**

MODEL	MS-33 Portable type
Motor	Oil-less piston vacuum pump
on/off s/w	Toggle/Foot type
Flow rate	35 L/min
Power	Ac 220V, 60Hz, 150W

CBB, SCBB series models

This is very necessary equipment to provide you with antiseptic work condition. Our FTCBS series is very suitable for the place where needs cleanness work like medical science, pharmacy, agriculture, new composition and electrical industry field.

The high performance ULPA & HEPA filter are equipped in the FTCBS series as a main and assistant filter and this superior feature maximize the optimum cleanness and purity.

The smooth Stainless Steel work surface and glass window assure optimum sanitary working conditions for the materials handled.

The highly-efficient UV Lamp comes with strong germicidal power to disinfect bacteria within 30 minutes.

With the specialized sound absorbing materials, it reduces noise muchmore than any other products.

Low discharge volume and very quiet operation mechanism.

GENERAL SPECIFICATIONS

Main Filter	ULPA Filter (99.99% efficient at 0.1micron particles)
Assistant Filter	HEPA Filter (99.97% efficient at 0.3micron particles)
Air Velocity	0.3~0.5m/sec (9-phase controllable)
Air Flow Meter	Analog Manometer or hour meter (Option)
Illumination	Fluorescent Lamp 40W or 20W
Sterilizing	UV Lamp 40W or 20W
Controller	LCD Microprocessor (Filter Change Alarm)
Materials	Internal Material: Stainless Steel Plate (바닥판)
	External Material: Steel Plate With Powder Coating
	Window: High Temperature safety glass of thickness 5mm
Door	Sliding Glass Door/Tempered Safety Glass
Utility	Air Cock, Gas Cock, Electric Outlets
	(AC 220Vx1ea & 110Vx1ea)
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	CBB-900/SCBB-900	CBB-1300/SCBB-1300	CBB-1600/SCBB-1600
External Dimension (L x D x H) (mm)	900 x 800 x 1,940	1,300 x 800 x 1,940	1.600 x 800 x 1,940
Type	Biological Safety Type	Biological Safety Type	Biological Safety Type

CLEAN BENCH (크린벤치)

The high-performance CLEAN BENCH with its advanced features & stylish & user-friendly design



CBV-Type

**SUCTION PUMP**

MODEL	MS-33 Portable type
Motor	Oil-less piston vacuum pump
on/off s/w	Toggle/Foot type
Flow rate	35 L/min
Power	Ac 220V, 60Hz, 150W

CBV, SCBV series models

This is very necessary equipment to provide you with antiseptic work condition. FTCBV model series is very suitable for the place where needs cleanness work like medical science, pharmacy, agriculture, new composition and electrical industry field.

It is used for various works that require maintenance of the cleanness and purity like plant tissue culture, examination and, experimentation of precision electronic parts, medical science, pharmacy, agriculture sector and the like.

The highly efficient HEPA filter is installed in the FTCBV series and it maintains the optimum cleanness and purity.

Being equipped with the Prefilter, it can extend the life of HEPA filter and protect it from pollution.

LCD Microprocessor automatically alarms when filter needs to be changed.

Built-in velocity controller features outstanding suitability to any circumstance.

The solid door is made of high-class tempered glass and this special feature enables end-users to easily monitor inside the workzone with efficient protection function to prevent end-users from ultraviolet rays.

GENERAL SPECIFICATIONS

Main Filter	ULPA Filter (99.97% efficient at 0.3 micron particles)
Prefilter	High-efficiency nylon filter
Air Velocity	0.3~0.5 m/sec (9-phase controllable)
Illumination	Fluorescent Lamp 40W or 20W
Sterilizing	UV Lamp 40W xor 20W
Controller	LCD Microprocessor (Filter Change Alarm)
Materials	Internal Material: Stainless Steel Plate(바닥판)
	Exterior Material: Steel Plate with Powder Coating
	Window: High Temperature safety glass of thickness 5mm
Door	Sliding Glass Door/Tempered Safety Glass
Utility	Air Cock, Gas Cock, Electric Outlets (AC 220V x 1ea & 110V x 1ea)
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	CBV-900/SCBV-900	CBV-1300/SCBV-1300	CBV-1600/SCBV-1600
External Dimension (L x D x H) (mm)	900 x 800 x 1,920	1,300 x 800 x 1,920	1,600 x 800 x 1,920
Type	Vertical Type	Vertical Type	Vertical Type

LAMINAR FLOW & SAFETY CABINET (크린벤치)

The optimized efficiency of the newly developed LAMINAR FLOW & SAFETY CABINET with the advanced functions designed for Biological Safety Class II type

LTS series models**SUCTION PUMP**

MODEL	MS-33 Portable type
Motor	Oil-less piston vacuum pump
on/off s/w	Toggle/Foot type
Flow rate	35 L/min
Power	Ac 220V, 60Hz, 150W

The newest gas-spring is effectively adopted into the opening & closing system of the front door so this up-to-date mechanism helps endusers to make very easy opening and closing of the front door without taking the least strength. With the specialized sound absorbing materials, it successfully reduce noise more than any other products.

Very quiet operating mechanism.

The smooth stainless steel work surface and glass window assure optimized sanitary working conditions for the materials handled.

GENERAL SPECIFICATIONS

Filter & Efficiency	Re-circulation of 70% of purified air through main Hepa filter/ Exhaust of the rest 30% to Outside via assistant Hepa filter
	99.999% at 0.3um particles as its excellent efficiency
Control System	Microprocessor Digital Controller with wide range of 9 steps for air-velocity control
Illumination	Fluorescent Lamp/UV Lamp
Utility	Air Cock, Gas Cock, Electric Outlets

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	LST-1100	LST-1300	LST-1600	LST-1800
External Dimension (L x D x H) (mm)	1,100 x 770 x 1,400 (730)	1,300 x 770 x 1,400 (730)	1,600 x 770 x 1,400 (730)	1,800 x 770 x 1,400 (730)
Internal Dimension (L x D x H) (mm)	960 x 580 x 670	1,160 x 580 x 670	1,460 x 580 x 670	1,660 x 580 x 670

TEMPERATURE & HUMIDITY CHAMBER (항온항습기)

The optimum performance TEMPERATURE & HUMIDITY CHAMBER
with its advanced features & up-to-date design

**THC** series models

This distinguished FTTHC model series of Temperature & Humidity Chamber is openly recognized by our diversified customers in the world as the most suitable & high-efficiency equipment for Electronic industry, Automobile industry,

Automobile supply industry, Test laboratories, Quality assurance, Aircraft industry, Semiconductor, Mechanical engineering, Chemical industry, Plastic industry, Textile industry, Construction materials industry and Military engineering.

Option

- ☐ Touch Screen
- ☐ Recorder

**GENERAL SPECIFICATIONS**

Temp	Range : -20 °C to 120 °C (- 40 °C, -60 °C : Option), Accuracy : $\pm 1^{\circ}\text{C}$
	Controller : Digital PID Programmable, Controller
	(Option : 5.7 inch TFT-LCD Color Touch-Screen Precision-Programmable Controller with RS485 Communication Interface System with your PC for remote-monitoring and setting program)
Humidity	Range(%) : 30% to 98% RH, Accuracy : $\pm 3^{\circ}\text{C}$, 70%, Controller : Digital PID Controller
Material	Internal Material : Stainless Steel
	External Material : Steel Plate with Powder Coating
	Door : Silicone Packing Door
	Shelves : Stainless Steel, Adjustable
Air-Convection	Tangent Flow Fan With AC-Motor
Inner Sight Lamp	Water Proofed AC-30W
Freezer Comp	Air Cooling Unit System
Safety Device	Over, Under Temp, Protector, Level Monitor, Power Breaker
Power	AC 220V, 50/60Hz, 1Ø

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	THC-150	THC-216	THC-350
Capacity	150 Liters	216 Liters	350 Liters
Internal Dimension (W x D x H) (mm)	500 x 500 x 600	600 x 600 x 600	600 x 700 x 800
External Dimension (W x D x H) (mm)	1,010 x 890 x 1,710	1,200 x 990 x 1,800	1,200 x 1,100 x 1,900
Shelves	3 EA	3 EA	3 EA

PLANT GROWTH CHAMBER (식물 생장상)

The optimum performance PLANT GROWTH CHAMBER with user-friendly functions & excellent construction to maximize effectiveness of your invaluable test process

PGC series models

This distinguished FTPGC model series of Plant Growth Chamber is openly recognized by our worldwide end-users as the most suitable & high-efficiency equipment for agriculture, biotechnology and various growth test.

**GENERAL SPECIFICATIONS**

Temperature	Range : 0°C to 60°C (Light ON : 10°C to 60°C)
	Accuracy : $\pm 0.5^{\circ}\text{C}$ at 20°C, Program : 10 Step Program
	Controller (Standard) : Microprocessor PID Controller
	(OPTIONAL : The Newest and High-Precision 5.7 inch TFT-LCD Color)
Humidity	Range : 30% to 98% RH
	Accuracy : $\pm 1^{\circ}\text{C}$ at 70%, Program : 10 Step Program
	Sensor : Electronic Device
	Humidifier : Evaporation by motor with SUS316 Pipe Heater
	Controller : Microprocessor PID Program Controller
	Lux Meter : LCD Display Movable with flexible cable
Material	Bank : 3side wall with water proof tube
	Illumination Period : 7 Step Photo-Period Control, 10 Step Programmable
	Internal Material : Stainless Steel (SUS304, First Grade Polishing Plate)
Safety Device	Exterior Material : Steel Plate with Powder Coating
	Shelves' Construction : ABS coating (Adjustable Type)
	Leakage breaker for power supply
	Over current protector, Overheat protector
Door	Switch-off after alarm for overheating, Level Monitoring System
	Door opening alarm, Special alarm for water empty
Optional	Safety Double Door, Silicon Packing Magnetic Door
Optional	RS-485 Communication Interface
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	PGC-504	PGC-768	PGC-1344
Chamber Capacity	504 Liters	768 Liters	1,344 Liters
Internal Dimension (L x D x H) (mm)	700 x 600 x 1,200	800 x 800 x 1,200	1,400 x 800 x 1,200
Illumination	Maximum 15,000 Lux	Maximum 15,000 Lux	Maximum 23,000 Lux
Cooling Device	Hermetically sealed Compressor(1/2 HP)	Hermetically sealed Compressor(1/3 HP)	Hermetically sealed Compressor(1 HP)
Shelves	3 EA	4 EA	8 EA

GROWTH CHAMBER (생장상)

The optimum performance GROWTH CHAMBER with user-friendly functions & excellent construction to maximize effectiveness of your invaluable test process

GC series models



This distinguished FTGC model series of Growth Chamber is openly recognized by our worldwide end-users as the most suitable & high-efficiency equipment for agriculture, biotechnology and various growth test.

GENERAL SPECIFICATIONS

Temperature	Range : 0 °C to 60 °C (Light ON : 10 °C to 60 °C), Accuracy : ± 0.5 °C at 20 °C, Program : 10 Step Program
	Controller (Standard) : Microprocessor PID Controller (OPTIONAL : The Newest and High-Precision 5.7 inch TFT-LCD Color)
	Touch-Screen Programmable High-Sensitivity Controller With The Newest 2 Channels Precise Control System
Humidity	Range : 30% to 98% RH, Accuracy : ± 1 °C at 70%, Program : 10 Step Program, Sensor : Electronic Device
	Humidifier : Evaporation by motor with SUS316 Pipe Heater
	Controller : Microprocessor PID Program Controller
	Lux Meter : LCD Display Movable with flexible cable
Material	Illumination System : Top Illumination Light Bank System with water-proof tube
	Internal Material : Stainless Steel (SUS304, First Grade Polishing Plate)
	External Material : Steel Plate with Powder Coating
	Shelves' Construction : ABS coating (Adjustable Type)
Safety Device	Leakage breaker for power supply, Over current protector, Overheat protector, Switch-off after alarm for overheating Level Monitoring System, Door opening alarm, Special alarm for water empty
Door	Safety Double Door, Silicon Packing Magnetic Door
Optional	RS-485 Communication Interface
Supply Voltage & Frequency	AC 230V, 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	GC-588	GC-768	GC-1344
Chamber Capacity	588 Liters	768 Liters	1,344 Liters
Internal Dimension (L x D x H) (mm)	700 x 700 x 1,200	800 x 800 x 1,200	1,400 x 800 x 1,200
Illumination	Maximum 15,000 Lux	Maximum 15,000 Lux	Maximum 23,000 Lux
Cooling Device	Hermetically sealed Compressor	Hermetically sealed Compressor	Hermetically sealed Compressor
Shelves	4 EA	4 EA	8 EA

STABILITY CHAMBER (생장상)**STABILITY CHAMBER**

Wide range of temperature chambers as well as stability chambers for testing large size components and products.

WCS series models

Uniform high accurate and reliable temperature control Welded and sealed inner oven.

High temperature inner and outer door gaskets.

Friendly, flexible, up-to date control and management systems.

Allows easy servicing and upgrades.

Computer control is available.

Network connection of several chambers to a single “master” control unit allowing centralized supervision both in local and remote mode.

- ☐ Panelized stability chambers
- ☐ Solid construction stability chambers

GENERAL SPECIFICATIONS

Temperature	Control : Program PID controller, 5.7 inch TFT-LCD Touch-Screen Programmable Controller
	Range : 10~60 °C, Accuracy : $\pm 1^{\circ}\text{C}$ (25 °C), Stability : $\pm 1^{\circ}\text{C}$, Sensor : pt 100 Ω
Humidity Control	Program PID controller, 5.7 inch TFT-LCD Touch-Screen Programmable Controller
	Range : 30%~80%, Accuracy : $\pm 1.5\%$ (55%), Sensor : Electronic Sensor
Materials	Internal Material : Stainless Steel (Work Zone: 2T), External Material : Steel Plate Powder coating Panel
Insulation	Polyurethane Foam(50T)
Heater	Drying Heater(STS 304 Fin Heater), Humidity Heater(STS 304 Sheath Heater)
Door	Viewing Window(Heat Resistant Glass), Silicon Packing
Refrigeration	Air cooled Hermetically Sealed Compressor
Circulation Fan	Siroco Fan
Safety Device	Overload Protector, Overheat Protector, Refri. overload Protector, Cycle Counter, Repeat Counter, E.O.C.R
Electric requirement	AC 220V, 3 ϕ , 50/60Hz / AC 380V, 3 ϕ , 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	WCS-901	WCS-902	WCS-903
Chamber Capacity	3,000 Liters	4,725 Liters	11,610 Liters
Internal Dimension (L x D x H) (mm)	1,500 x 1,000 x 2,000	1,500 x 1,500 x 2,100	2,150 x 2,700 x 2,000
Cooling Device	Hermetically sealed Compressor	Hermetically sealed Compressor	Hermetically sealed Compressor

COLD LAB CHAMBER (저온 실험상)

CLC series models

This distinguished FTCLC model series of Cold LAB Chamber is openly recognized by our worldwide end-users as the most suitable & high-efficiency equipment for agriculture, biotechnology and various growth test.

GENERAL SPECIFICATIONS

Temperature	Range : 0~10°C, Uniformity : $\pm 2^{\circ}\text{C}$ at 4°C, Controller : Digital PID controller
Display	LED display
Material	Internal Material : Stainless Steel, Exterior Material : Steel Plate with Powder Coating
Illumination	Water proof F.L , 40 W x 1 EA
Safety Device	Exclusive High & Low temp. protector
Dor	Two door, Tempered Fair Glass
Defrost Device	Automatic type
Power	AC 220V, 50/60HZ, 4.3A

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	CLC-610	CLC-1120
Chamber Capacity	610 Liters	1120 Liters
Internal Dimension (L x D x H) (mm)	620 x 690 x 1,430	1,140 x 690 x 1,430
External Dimension (L x D x H) (mm)	740 x 800 x 2,020	1,257 x 800 x 2,020
Shelves	4 EA	8 EA
Weight	140 kg	180 kg

BIO CUBE (소형 냉동고)

DTF series models

- ☐ Upright-type Compact Deep Freezer
- ☐ Innovatively minimizes loss of cold air inside the chamber with High-Performance Vacuum Insulation which is specially designed by our intensive R&D.
- ☐ Easy to install in a testing bench of very narrow and small-sized research room
- ☐ FTDTF-35 of economic price features low-noise operating with low consumption of electrical power
- ☐ No need to do inconvenient cleaning for filter
- ☐ Advanced Adoption of the Environment-Friendly HFC (Hydrofluorocarbon) refrigerant without any destruction of Ozone Layer.

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	DTF-35
Cooling Performance	-85°C/Recommended Operating Range -70°C to -80°C
Capacity	Equivalent to 35 Liters
Internal Dimension (W x D x H) (mm)	336 x 356 x 295
External Dimension (W x D x H) (mm)	(460+35) x (620+40) x 680
Weight	Approximately 35 Kilograms
Refrigerant	Environment-Friendly HFC (Hydrofluorocarbon)
Power Supply and Frequency	AC 220V, 50/60Hz
Consumption of Electrical Power	305 Watts

Options

- ☐ Dedicated Tray
- ☐ Outer Dimension : W140 x D290 x H283
- ☐ Storage Drawer : 10 pcs per one Tray
(5 Drawers x 2 Rows in one Tray)
(FULL SET : Total Two Dedicated Trays with total 20 Drawers)

SHAKER (진탕기)

The optimum performance SHAKER with its proven features & stylish design



SK series models

Feature

- ☐ Brushless DC Motor
- ☐ Safety Device.
- ☐ Universal spring rack (Option)
- ☐ Shaking Orbital Motion
- ☐ Digital PID Controller

GENERAL SPECIFICATIONS

Speed Range	max 350 rpm
Speed control	LED digital controller
Display	Digital display
Timer	99hr 59min
Motion	orbital
Motor	Brushless DC Motor
Drive system	Beltless direct drive
Power	AC 220V, 60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	SK-350	SK-450	SK-750
Dimensions	350 x 350 x 110 mm	450 x 450 x 120 mm	750 x 500 x 120mm
Capacity	250 mL x 9 EA	250 mL x 25 EA	250 mL x 40 EA
Speed (Max.)	350 rpm		

OPTIONAL ACCESSORIES



Plate of Flask

Spring Rack

OPTIONAL ACCESSORIES

CAPACITY	SK-350	SK-450	SK-750
100 ml Flask	16	36	60
250 ml Flask	9	25	40
500 ml Flask	9	16	24
1000 ml Flask	4	9	15
2000 ml Flask	2	4	8
Plate Size	350 x 350 mm	450 x 450 mm	750 x 500 mm
Spring Rack	350 x 350 mm	450 x 450 mm	750 x 500 mm

BALL MILL (볼밀)

BM series models



ACCESSORIES 부속품

- ☐ 기본 옵션 – 간격 조절용 렌치.
- ☐ 선택 옵션 – JAR와 BALL은 선택옵션입니다.

GENERAL SPECIFICATIONS

MODEL	BM400 (Open Type)
Power(Input)	AC.200~260 Vrms, 60 Hz
Fuse	T3.0A 230 VAC
Current	1.5A - 230Vrms
Motor Wattage	BLDC.100W Geared Motor
Torque Output	15.4~300 (Kgf-Cm)
r.p.m Range	10~400 max
r.p.m Display	16 x 2 Character LCD Display
r.p.m accuracy	
Control	Push Key Pad & Jog Dial
Timer	Digital LCD Pannel DD:HH:MM:SS
기본제공 Roller	Ø 50 X 300mm (Flat Type) x 1단 (양단 턱 10mm 폭, 높이), Rubber Coated
Roller 간격 조절 범위	최소 57mm, 최대 150mm
Ball Mill Size	540(W) x 440(D) x 240(H) mm
Enclosure	Steel Plate hammer coated
Weight	25 Kg

HOT PLATE & MAGNETIC STIRRER (교반기)

The high-performance HOT PLATE & MAGNETIC STIRRER with its advanced features & stylish & user-friendly design

**HPMD** series models**Feature**

- ☐ Two-Different Digital Type models available for customer's preference
- ☐ Two digital type to choice from Customer.
- ☐ Chemically resistant ceramic coated.
- ☐ Control Methods of Setting & spin.
- ☐ Micro processor control for accurate Temperature setting & RPM.
- ☐ Constructed for a long & durable life.
- ☐ Charming feature which statute indicator.
- ☐ Clearly visible LED display suiting all lighting conditions.
- ☐ Accurate temperature control by microprocessor.
- ☐ Setting retained memory.
- ☐ Uniform heating conditions.
- ☐ Monitoring of the plate temperature.
- ☐ Controlled by easy to use dial.
- ☐ Simultaneous display of set & actual temperature.

Option

- ☐ Temp Sensor.
- ☐ Stand

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	HPMD-180
Temperature Controller	PID Controller (LED)
Speed Range	100-1500 RPM
Temperature Range	Ambient to 350 °C
Plate area	180 x 180 mm
Top Plate	Ceramic coated plate
Dimension (W x D x H) (mm)	335 x 230 x 90
Weight	4.5 kgs
Power	AC 220V, 60hz

VORTEX MIXER (볼텍스 믹서)

The high-performance VORTEX MIXER with its advanced features & user-friendly design



**VM** series models**Feature**

- ☐ Variable warking Motion
- ☐ Easy to use Touch on Motion
- ☐ Sharming design
- ☐ Max 3200RPM

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	VM-501
Speed Rang	0-3,000 RPM
Operation Mode	Touch On & Continue On
Material	Steel Powder Coating & ABS
Head	Rubber Mixing Cup
Dimension (W x D x H) (mm)	160 x 170 x 160
Power	AC 220V, 0.14A, 50/60Hz

STANDARD ACCESSORIES

	
Mixing Cup	Platform

HOT PLATE & MAGNETIC STIRRER (가열 교반기 & 자력 교반기)

The high-performance HOT PLATE & MAGNETIC STIRRER with its advanced features & user-friendly design

FTHPM, FTHP, FTM series models

N- type

GENERAL SPECIFICATIONS

Case Construction	Stainless steel and Aluminum, with chemically resistance powder coating
Plate size	7.08"x7.08"(180x180mm)
Element Temperature	Up to 320°C, Maximum (FTHPM-10D, FTHPM-10, FTHP-10) → Surface temperature of heating plate
Supply Voltage & Frequency	AC 110~120V (or 220~230V), 50/60Hz

Usage

For general heating. (chemical reaction or distillation).

- FTHPM-10D/FTHPM-10/FTHP-10 For general magnetic stirring
- FTHPM-10D/FTHPM-10/FTM-10 This is the strongly recommended high-efficiency stirrer used for biological or chemical experiments, where an airtight container or high-purity sample is required
- FTHPM-10D/FTHPM-10/FTHP-10 For titration → FTHPM-10D/FTHPM-10/FTM-10

Special Features

Heat is equally distributed due to the use of the Panel Heater.

- FTHPM-10D/FTHPM-10/FTHP-10

This product encloses both a hot plate and a magnetic stirrer in one body so that heating and stirring can be performed simultaneously or separately with the added features of temperature control and speed control

- FTHPM-10D/FTHPM-10

The case (body) painting is treated with KARUMEL powder coating so that it withstands peeling due to external impacts and scratches.

The ceramic-coated heat plate withstands long-term exposure to acids and alkali, protecting it against peeling and distortion.

FTHPM-10D(Digital Type, Hot Plate & Magnetic Stirrer)

Heating Function (Hot Plate)

- Consists of a K-type sensor and an accurate temperature can be obtained by using proportional control output (PID 4~20mA).
- Control Method : PID (Proportional Integral Differential) Type.
- Temperature Accuracy: Within±1% (based on experiment on liquid).
- The range of error can be widened according to experiment environments in case of experimenting on solid.
- Based on the user's need, before using, the temperature should be controlled by using a separate thermometer.
- Heater Capacity: 550 Wattage
- Digital Display (LED).

Stirring Function (Magnetic Stirrer)

- Control Method: Feedback type.
- Due to the use of a feedback-type speed control system, there is no rpm change according to load change.
- Speed Accuracy: ±0.2%
- The high-efficiency built-in motor and feedback speed controller support a powerful motor output and flexible control from 50 to 1200rpm.
- This motor supports a stable speed at the start speed (low speed) and low heat emission.
- These motor and powerful magnet prevent breakaway of the stir bar even at high speed.
- Digital Display (LED).

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTHPM-10D (FTHPM-10)	FTHP-10	FTM-10
Control Method	Heater : Digital P.I.D. control, Motor : Feedback Control Thermo Couple : "K"(CA)type, Temperature/Speed Digital Display	Heater : Proportional Voltage Control Motor : Stepless Electronic Control	Stepless Electronic Control Proportional Voltage Control
Heater Capacity	550 Wattage	550 Wattage	550 Wattage
Motor Type	DC 24V, RPM : 100~1,200	DC 24V, RPM : 100~1,700	-
Power Supply	115V or 230V, 50/60Hz	115V or 230V, 50/60Hz	115V or 230V, 50/60Hz

HOT PLATE & MAGNETIC STIRRER (가열 교반기 & 자력 교반기)

The high-performance HOT PLATE & MAGNETIC STIRRER with its advanced features & stylish & user-friendly design

FTHPM series models**Usage**

For general heating (Chemical reaction or distillation).

For general magnetic stirring.

This is a stirrer used for biological or chemical experiments, where an airtight container or high-purity sample is required. For titration.

Special Features

Manufacturing can be made in various forms based on customers experiment environments and orders.

→ Digital or Analogue type 1 row-2 tubes/4tubes/6tubes etc.

→ Digital or Analogue type 2 row-2 tubes/4tubes/6tubes etc.

→ Hot Plates in diverse sizes.

→ Digital or Analogue Type Hot plate & Stirrer in diverse plate sizes.

→ Digital or Analogue Type Magnetic stirrer in diverse plate sizes.

→ Digital or Analogue Type Hot plate in diverse plate sizes.

→ Products only for chemical experiments that use acid and alkali, etc.

→ Products only for chemical experiments environments like a confined area.

Customized to other application productions such as FTHPM-10D, FTHPM-10, FTM-10, FTHP-10.

FTHPM-10(Analogue Type, Hot Plate & Magnetic Stirrer)

Heating Function (Hot Plate)

→ The temperature can be effectively controlled from low to high temperatures as a PVC (proportional voltage control) type controller is built in

●Based on the user's need, before using, the temperature should be controlled by using a separate thermometer.

●What is the Proportional Voltage Control?

This is a method where constant and steady state voltage is supplied to each load according to different dial settings.

→ Heater Capacity : 550 Wattage

Stirring Function. (Magnetic Stirrer)

→ You can adjust the speed from 50 to 1700 rpm with the help of the high-efficiency DC motor and speed controller (Stepless electronic control type) which are built in.

→ This DC motor supports a stable speed at the start speed (low speed) and low heat emission.

→ These Dc motor and powerful magnet prevent breakaway of the stirbar even at high speed.

FTHP-10(Hot Plate)

Only heating function was separated from FTHPM-10, the product of our company.

The heating function is same as FTHPM-10's.

FTM-10(Magnetic Stirrer)

Only stirring function was separated from FTHPM-10, the product of our company.

The stirring function is same as FTHPM-10's.

GENERAL SPECIFICATIONS

Case Construction	Stepless Electronic Control
Element Temperature	Up to 320 °C, Maximum → Surface Temperature of Heating Plate
Supply Voltage & Frequency	AC110~120V (or 220~230V), 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTHPM-20	FTHPM-40	FTHPM-42	FTHPM-62
Control	Heater : Proportional Voltage Control		Motor : Stepless Electronic Control	
Heater Capacity	500 x 2 Wattage	500 x 4 Wattage	500 x 4 Wattage	500 x 6 Wattage
Motor Type	DC 24V RPM : 100~1,700	DC 24V RPM : 100~1,700	DC 24V RPM : 100~1,700	DC 24V RPM : 100~1,700
Power Supply	115V or 220V 50/60Hz	115V or 220V 50/60Hz	115V or 220V 50/60Hz	115V or 220V 50/60Hz

HEATING MANTLE (히팅 맨틀)

The high-performance HEATING MANTLE with its advanced features & user-friendly design

FTHM series models**FTHM TYPE**

Digital type



Digital type (100~2,000mL)

Usage

Besides laboratory-standard glasswares, the usage includes heating, warming, and insulation of special containers such as metal containers, pipes, and reactors.

Special Features

Products installed temperature voltage controller.

→ FTHM Series Control Method : Proportional Voltage Control.

* Based on the user's need, before using, the temperature should be controlled by using a separate thermometer

As the heated part (heated object) is hand-woven using fiber glass,

Fire is prevented by a built-in Thermal protector, which automatically shuts down the product in case the inside temperature exceeds an appropriate temperature.

→ The product resumes normal operation when the inside temperature returns to normal.

Thermal Insulation uses nontoxic asbestos-free ceramic wool (fiber glass).

→ There are two kinds of heated part shape like flask type and beaker type.

Products installed temperature voltage controller.

→ FTHM Series Control Method : Proportional Voltage Control.

GENERAL SPECIFICATIONS

Case Construction	Steel, with chemically resistant powder coating
Thermal Insulation	Asbestos-free ceramic wool. (fiber glass)
	Heating Element
Mantle	Woven glass fiber mat
Heating Element Temperature	Up to 450 °C, Maximum
Supply Voltage & Frequency	AC 110~220V (or 220~230V), 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

Capacity(mL) MODEL	FTHM-F (Flask Type)	FTHM-B (Beaker Type)	WATTAGE
100	FTHM-F10	FTHM-B10	85
200/250/300	FTHM-F20/25/30	FTHM-B20/25/30	150
500	FTHM-F50	FTHM-B50	230
1,000	FTHM-F100	FTHM-B100	330
2,000	FTHM-F200	FTHM-B200	470
3,000	FTHM-F300	FTHM-B300	570
5,000	FTHM-F500	FTHM-B500	850
10,000	FTHM-F1,000	FTHM-B1,000	1,400
20,000	FTHM-F2,000	FTHM-B2,000	1,800

HEATING MANTLE WITH STIRRING (히팅 맨틀)

The high-performance HEATING MANTLE WITH STIRRING with its advanced features & user-friendly design

FTHMS series models



Digital type (100~2,000mL)

Feature

- ☐ Stirring mantle of the standard type with temperature and easy to use.
- ☐ Consist of magnetic stirrer and heating mantle on one body, Control temperature and stirring concurrently, control temperature and stirring independently.
- ☐ Heating temperature is controlled by analog temperature controller And controlled effectively from low temperature to high temperature.
- ☐ Maintain stirring speed accurately and uniformly by feedback control.
- ☐ Smooth acceleration of stirring speed ensures no spillage.
- ☐ All kinds of Flasks & Beakers can be used-DURAN

GENERAL SPECIFICATIONS

Heating Element Temperature	Up to 450 °C max.
Temp. Controller	Analog temperature controller
Speed control	Feedback control.
Stirring speed	100-1500 rpm.
Power supply	220V or 110V, 50/60HZ.

INDIVIDUAL SPECIFICATIONS PER MODEL

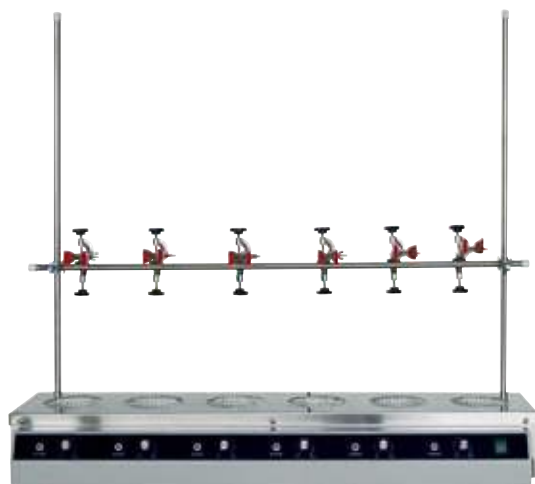
MODEL	Capacity	Wattage	Flask dia	Dimensions	Depth(In)
FTHMS-F10	100 mL	80	63~66 mm	Ø145 x 140(H) mm	40
FTHMS-F25	250 mL	140	83~86 mm	Ø145 x 140(H) mm	50
FTHMS-F50	500 mL	240	102~105 mm	Ø190 x 165(H) mm	65
FTHMS-F100	1000 mL	350	130~133 mm	Ø145 x 140(H) mm	75
FTHMS-F200	2000 mL	450	165~169 mm	Ø145 x 140(H) mm	100
FTHMS-F300	3000 mL	550	184~187 mm	Ø145 x 140(H) mm	105
FTHMS-F500	5000 mL	800	221~224 mm	Ø325 x 226(H) mm	131
FTHMS-F600	6000 mL	800	234~237 mm	Ø325 x 226(H) mm	131

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	Capacity	Wattage	Beaker dia	Dimensions	Depth(In)
FTHMS-B10	100 mL	80	50~52 mm	Ø145 x 140(H) mm	45 mm
FTHMS-B25	250 mL	140	68~70 mm	Ø190 x 165(H) mm	70 mm
FTHMS-B40	400 mL	240	79~81 mm	Ø190 x 165(H) mm	70 mm
FTHMS-B60	600 mL	240	88~90 mm	Ø190 x 165(H) mm	72 mm
FTHMS-B100	1000 mL	350	105~108 mm	Ø270 x 200(H) mm	105 mm
FTHMS-B200	2000 mL	450	130~132 mm	Ø270 x 235(H) mm	140 mm
FTHMS-B300	3000 mL	550	151~153 mm	Ø270 x 235(H) mm	140 mm
FTHMS-B500	5000 mL	800	169~171 mm	Ø325 x 270(H) mm	170 mm
FTHMS-B600	6000 mL	800	169~171 mm	Ø325 x 270(H) mm	170 mm

COMBINATION MANTLE (히팅 맨틀)

The high-performance COMBINATION MANTLE with its advanced features & user-friendly design

**FTCMD, FTCM** series models**Usage**

Experiments in the areas of food, environment, textile, chemistry and petroleum. This is used in various experiments involving extraction, distillation, circulation, reactors, etc.

Special Features

This combination type help you save time and this is also suitable for comparison and analysis tests, as it enables you to successfully make multiple tests simultaneously.

As the heated part (heated object) is hand-woven using fiber glass.

Fire is prevented by a built-in Thermal protector, which automatically shuts down the product in case the inside temperature exceeds an appropriate temperature.

Thermal Insulation uses nontoxic asbestos-free ceramic wool(fiber glass).

Because the durable body finish is painted with KARUMEL powder material, the surface resists peeling, scratching and staining.

GENERAL SPECIFICATIONS

Case Construction	Body: Steel, with chemically resistant powder coating
	Cover: High-grade stainless steel
Thermal Insulation	Asbestos-free ceramic wool. (fiber glass)
Heating Element	Ni-chrome wire
Mantle	Woven glass fiber mat
Heating Element Temperature	Up to 450 °C, Maximum
Supply Voltage & Frequency	AC 110~220V (or 220~230V), 50/60Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

Capacity(mL)	MODEL	FTCMD (DIGITAL TYPE)		FTCM (ANALOG TYPE)	
		FTCMD-3H	FTCMD-6H	FTCM-3H	FTCM-6H
200/250/300 mL		FTCMD-F25-3H	FTCMD-F25-6H	FTCM-25-3H	FTCM-25-6H
500 mL		FTCMD-F50-3H	FTCMD-F50-6H	FTCM-50-3H	FTCM-50-6H
1,000 mL		FTCMD-F100-3H	FTCMD-F100-6H	FTCM-100-3H	FTCM-100-6H

ELECTRONIC OVERHEAD STIRTERS (교반기)

The high-performance ELECTRONIC OVERHEAD STIRTERS with its advanced features & user-friendly design

FTS3000 series models**GENERAL SPECIFICATIONS**

Speed Display	Scale
Chuck Range	1~10 mm
Power Supply	AC 110~115V or AC 220~230V(50/60Hz)

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTSL4000D	FTSL3000D	FTSM3000D	FTSH3000D
Stirring Quantity (H2O)	10 Liters	10 Liters	20 Liters	40 Liters
Max. Viscosity (mPas)	10,000	10,000	50,000	100,000
Motor (Output)	DC 50 W	DC 50 W	DC 100 W	DC 200 W
Max. Torque (Ncm)	30	30	60	120
Weight	3.7 kg	3.7 kg	4.6 kg	5.5 kg
Dimensions (W x D x H) (mm)	100 × 175 × 255	100 × 175 × 255	100 × 175 × 255	100 × 175 × 310
Speed Range (rpm)	100~4,000	100~3,000	100~3,000	100~3,000

**GENERAL SPECIFICATIONS**

Speed Display	Scale
Chuck Range	1~10 mm
Power Supply	AC 110~115V or AC 220~230V(50/60Hz)

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTSL4000	FTSL3000	FTSM3000	FTSH3000
Stirring Quantity (H2O)	10 Liters	10 Liters	20 Liters	40 Liters
Max. Viscosity (mPas)	10,000	10,000	50,000	100,000
Motor (Output)	DC 50 W	DC 50 W	DC 100 W	DC 200 W
Max. Torque (Ncm)	30	30	60	120
Weight	3.7 kg	3.7 kg	4.6 kg	5.5 kg
Dimensions (W x D x H) (mm)	100 × 175 × 255	100 × 175 × 255	100 × 175 × 255	100 × 175 × 310
Speed Range (rpm)	100~4,000	100~3,000	100~3,000	100~3,000

FTS600, 300 series models



GENERAL SPECIFICATIONS

Timer	99 h 59 m
Speed Control	PWM/Digital Feedback Control(LCD Display)
Chuck Range	1-10 mm
Power Supply	AC 110~115V or AC 220~230V(50/60Hz)

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	SL600D	SM600D	SH600D	SL300D	SM300D	SH300D
Stirring Quantity (H2O)	40 Liters	60 Liters	90 Liters	50 Liters	70 Liters	100 Liters
Max. Viscosity (mPas)	100,000	150,000	250,000	130,000	200,000	300,000
Motor (Output)	DC 50 W	DC 100 W	DC 200 W	DC 50 W	DC 100 W	DC 200 W
Max. Torque (Ncm)	200	400	800	300	500	900
Weight	4 kg	5.4 kg	7 kg	4 kg	5.4 kg	7 kg
Dimensions (W x D x H) (mm)	100 x 175 x 255	100 x 175 x 300	100 x 175 x 360	100 x 175 x 255	100 x 175 x 300	100 x 175 x 360
Speed Range (rpm)	50~600	50~600	50~600	50~300	50~300	50~300



GENERAL SPECIFICATIONS

Speed Control	Scale
Chuck Range	1~10 mm
Power Supply	AC 110~115V or AC 220~230V(50/60Hz)

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	SL600	SM600	SH600	SL300	SM300	SH300
Stirring Quantity (H2O)	40 Liters	60 Liters	90 Liters	50 Liters	70 Liters	100 Liters
Max. Viscosity (mPas)	130,000	200,000mPas	300,000	130,000	200,000	300,000
Motor (Output)	DC 50 W	DC 100 W	DC 200 W	DC 50 W	DC 100 W	DC 200 W
Max. Torque (Ncm)	200	400	800	300	500	900
Weight	4 kg	5.4 kg	7 kg	4 kg	5.4 kg	7 kg
Dimensions (WxDxH)mm	100 x 175 x 255	100 x 175 x 300	100 x 175 x 360	100 x 175 x 255	100 x 175 x 300	100 x 175 x 360
Speed Range (rpm)	50~600	50~600	50~600	50~300	50~300	50~300

HOMOGENIZER

FTHMZ series models



GENERAL SPECIFICATIONS

Stirring Quantity (H2O)	500~2,000 mL
Max. Viscosity (mPas)	5,000
Speed Range (rpm)	500~11,000
Motor (Output)	DC 220 W
Usable Tool	Ø25(Basic tool), Ø30
Chuck Range	1~10 mm
Power Supply	AC 110~115V

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTHMZ-20DN	FTHMZ-20N
Dimensions (W x D x H) (mm)	115 x 90 x 255	115 x 90 x 215
Weight	3.2 kg	3 kg
Speed Display	Digital Scale	Scale

Specifications of Dispersing Tools

	Ø25(basic)	Ø35
Stirrer Quantity (mL)	10~2,000	
Stator Dia (mm)	25	35
Rotator Dia (mm)	19.5	27.5
Bearing Material	PTEE	
Suitable for Solvent	Yes	
TEmperature Range (°C)	180	
Sterilized Method	All methods	
Suspensions (µm)	15~50	20~50
Emulsions (µm)	1~10	



DIRECT DRIVEN STIRRER

The high-performance DIRECT DRIVEN STIRRER with its advanced features & user-friendly design



FTDS type



FTDSS type

FTDS, FTDSS series models

Usage

The excellent device to stir and mix between various liquids, between a liquid and a solid, or powders, Emulsifying, blending, dispersing, etc of chemical, pharmaceutical, food and cosmetic products.

Spacial Feature

RPM can be arbitrarily set, as a stepless electric speed controller is installed.

The equipment basically consists of a body, chuck, chuck handle, stainless steel bladed propeller(option), clamp(option), and U(H)-type stand(option)

FTDS-11/11D/41/41D

High speed control for mixing light materials(3,000rpm(Max.)

Available various speed control

Impeller designed for free up and down type.

General purpose for small amount, light material.

Speed range for 3,000 rpm Precision chuck for shaft Øfrom 1~10mm

Quiet operation and electric safety circuit.

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTDS-11, FTDSS-11D	FTDSS-41, FTDSS-41D	FTDSS-20, FTDSS-20D	FTDSS-20W, FTDSS-20DW
Using(Viscosity)	Low viscosity	Middle viscosity	Middle viscosity	High viscosity
Motor	DC 60 W	DC 100 W	DC 60 W	DC 120 W
Stirring capacity(H2O)	10 Liters	60 Liters	40 Liters	60 Liters
Max. Torque	30(Ncm)	400(Ncm)	200(Ncm)	400(Ncm)
Speed Range	3,000 rpm(Max.)	3,000 rpm(Max.)	1,000 rpm(Max.)	1,000 rpm(Max.)
Control	FTDS-11, FTDSS-41, FTDSS-20, FTDSS-20W : Stepless Electronic			
	FTDS-11D, FTDSS-41D, FTDSS-20D, FTDSS-20DW : Digital display			
Chuck Range	1 ~ 10 mm			
Power supply	AC 220 V, 50/60Hz			

MAGNETIC DRIVER

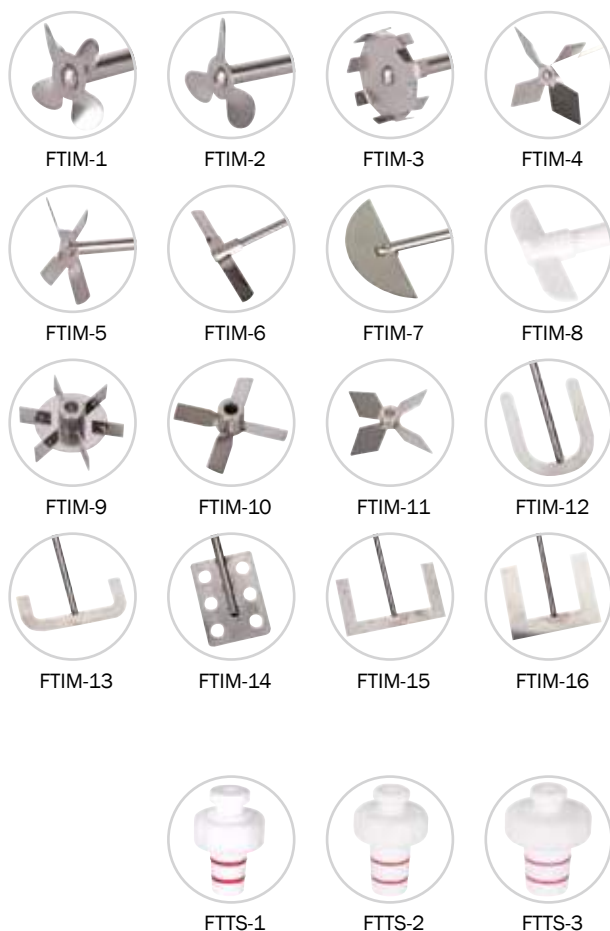


In the decompression or pressurization condition within reaction vessels It's possible to mix uniform decomposition and synthetic liquid material using processed enzymes of solvent for stirring resin.

An experiment that needs a big stirring to keep the complete sealing statement.

To use connected with Overhead stirrer.

- ☐ Outer magnet and inner magnet are rare earths magnet, to implement high torque to generate a powerful magnetic force.
- ☐ Low vibration & high rotation in an oxygen-free layer
- ☐ External cooling systems a convenient connections to the cooling including basic line. (Experiment more than 70 cities)
- ☐ An area that's connected to ground Joint of hyaline glass in an oxygen-free layer, It's simple to separate with hyaline glass.



INDIVIDUAL SPECIFICATIONS PER MODEL

Impeller no.	Impeller size(Ø)	Shaft Length(mm)	Shaft size(Ø)	
FTIM-1	40	350 ~ 450	8	
FTIM-2	50			
FTIM-3	40 or 60			
FTIM-4	90	500		
FTIM-5	70			
FTIM-6	100			
FTIM-7	60 ~ 90			
FTIM-8	80			
FTIM-9	65			
FTIM-10	75			
FTIM-11	90			
FTIM-12	There are differences according to customers' orders. (customized products)			
FTIM-13				
FTIM-14				
FTIM-15				
FTIM-16				

INDIVIDUAL SPECIFICATIONS PER MODEL

TEFLON SEAL NO	SIZE
FTTS-1	24/40
FTTS-2	29/42
FTTS-3	34/45

STAND BASE

FT-H, FT-U series models

Usage

It is used for installing the stirring device and other auxiliary devices.

Special Features

Shakes are eliminated due to a stable structure and weight. Gap control is possible with the H-type, which facilitates using a large capacity.

INDIVIDUAL SPECIFICATIONS PER MODEL

Products Type	FT-H100	FT-U100
Height (mm)	900	820
Weight (kg)	12	6.8

SUPPORT JACK (서포트 잭)

FTSJ series models

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	FTSJ-150	FTSJ-200	FTSJ-250	FTSJ-300
Top Plate	150 x 150 mm	200 x 200 mm	250 x 250 mm	300 x 300 mm
Range	75 ~ 250 mm			

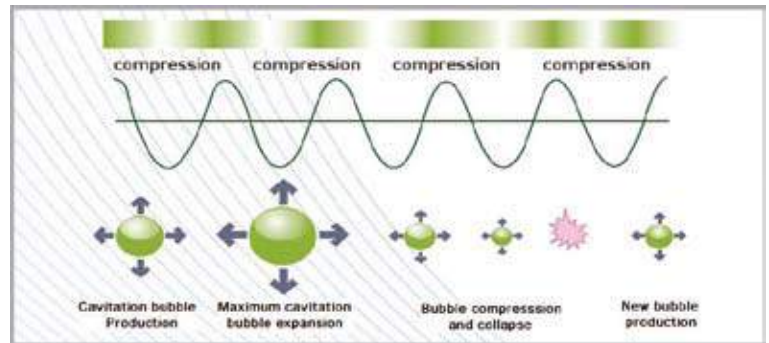


ULTRASONIC LIQUID (초음파 분쇄기)

STH series models



Operating Principle



Cavitation phenomenon occurs due to the repetitive fierce pressure when 20KHz or more ultrasound waves are irradiated. Particle dispersion, cell breakage, particle comminution and homogenization are performed by using the energy generated from high temperature (5000k), high pressure (500bar) and jet stream (100m/s) that are produced when this cavitation foaming (bubble) collapses.

Application Field

- ☐ Cell breakage
- ☐ Particle dispersing
- ☐ Particle comminution
- ☐ Homogenization
- ☐ Emulsification of liquid heterogeneous mixture
- ☐ Effective substance extraction
- ☐ catalyst action

Product Features

- ☐ Amplitude control
- ☐ Temperature Sensor
- ☐ Auto tuning & frequency control
- ☐ LCD Display - 24 Charter x 4Line LCD
- ☐ Interface System
 - Rotary Encoder, - Menbrane Key pad
 - RS232/422 command
- ☐ Overload protect System [Temp, Impedence]
- ☐ PC Linker System [RS232port]



MODEL	STH-500S	STH-750S	STH-1000S	STH-1500S
Frequency	20 KHz	20 KHz	20 KHz	20 KHz
Generator	Input power	AC 220V, 50/60Hz	AC 220V, 50/60Hz	AC 220V, 50/60Hz
	Output power	500 W	750 W	1000 W
	Size (W x D x Hmm)	360 x 290 x 130	360 x 360 x 130	360 x 450 x 130
Converter	STW4420E	STW6420E	STW6520E	STW6520E
Booster	STB4020	STB4824	STB6530	STB6530
Horn	STH1603	◎		
	STH1605	◎		
	STH1608	◎		
	STH2010	◎		
	STH2020	◎	◎	
	STH2415	◎	◎	
	STH2424	◎	◎	
	STH3015	◎	◎	
	STH3020		◎	
	STH3030		◎	
	STH4020		◎	
	STH4025		◎	
	STH4030		◎	◎
	STH4040		◎	◎
	STH5030			◎
	STH6030			◎
	STH7035			◎
	STH4025(入)			◎
	STH5030(入)			◎
	STH6030(入)			◎
	STH7035(入)			◎
Temp Sensor	◎	◎	◎	◎
Available for Floecell			◎	◎
PC Linker System	◎	◎	◎	◎

※ Please contact us for custom-made products.



AUTOMATIC WATER STILL (자동 증류수 제조기)

The optimum performance AUTOMATIC WATER STILL, WATER DISTILLER & AUTOMATIC DOUBLE WATER STILL with its proven features & stylish design

AWS, WD series models

These advanced FTAWS and FTWD models are openly recognized by our worldwide end-users as the most suitable & highefficiency equipment for a large variety of laboratory, chemical test, rinse or washing water for all sorts of glass wares, biological test-condition which needs no impurities, fundamental water (inlet water) for ultra purification system, autoclave and environmental cabinet.

This advanced Automatic Water Still, Water Distillers and Automatic Double Water Still produces and reserves distilled water on the important basis of high-effectiveness automated mechanism.

With its up-to-date design and practically large-sized storage reservoir, this superior equipment offers exceptional value for end-users.

It is very easy and safe to operate this advanced distillation system with every advanced device such as circuit breaker for overflow of electricity and electric leakage with overheating protection device.

With high-efficiency prefilter, it successfully filters impurities as the first procedure of distillation and this feature presents long life of this advanced equipment to every end-user.

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	Automatic Water Still (with the storage tank)			Water Distiller (without tank)		Automatic Double Water Still (with the storage tank)
	AWS-701	AWS-702	AWS-703	WD-501	WD-502	AWS-701D
Product Water	4 Liters / hr	8 Liters / hr	12 Liters / hr	4 Liters / hr	8 Liters / hr	4 Liters / hr
Heater	3 KW	6 KW	9 KW	3 KW	6 KW	9 KW
Cooling Water	40 Liters	70 Liters	90 Liters	40 Liters	70 Liters	50~70 Liters
External Dimension (L x D x H) (mm)	750 x 395 x 640	750 x 395 x 640	750 x 395 x 640	355 x 385 x 656	520 x 520 x 730	750 x 670 x 670
Storage Tank	20 Liters	20 Liters	20 Liters			20 Liters
Supply Voltage & Frequency	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz	230V, 50/60Hz (or 380V, 50/60Hz if customer request)
Material	Interior Construction: Stainless Steel (Boiler and Storage Tank), Exterior Construction: Steel Plate with Powder Coating					
Safety Device	Over Temperature Limit/Over Current Glass Fuse, Water Float Level Sensor/Water Supply Cut Off					

PYREX WATER SYSTEM (순수제조장치)

The high-performance PYREX WATER SYSTEM with its advanced features & stylish & user-friendly design



PRX series models

- ☐ Low energy and low water consumption
- ☐ Real time water quality check (Resistivity)
- ☐ Automated alarm for Ion-Filter exchange
- ☐ Low maintenance cost
- ☐ Digital Display

Application

- ☐ Bio-Science
- ☐ Tissue & Cell Culture
- ☐ HPLC, ICP, AA...
- ☐ Electrophoresis/Biotechnology
- ☐ BOD Test

Option

- ☐ 0.22
- ☐ Final Filter
- ☐ Water Tank

GENERAL SPECIFICATIONS

Rejection Rates	Monovalent Ions : 90% or more
	Polyvalent Ions : 95% or more
	Particles : 99% or more
	Most organics : 99% or more
	Bacteria : 99% or more
Water Quality	1MΩ_cm

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	PRX-501	PRX-502	PRX-502PLUS	PRX-503
Product Rate	3 Liters / hr	6 Liters / hr	8 Liters / hr	10 Liters / hr
Product Quality	1MΩ_cm	1MΩ_cm	1MΩ_cm	1MΩ_cm
Heater	Quartz heater	Digital Display	Digital Display	Digital Display
Boiler	All Pyrex Glass	Microprocessor Type	Microprocessor Type	Microprocessor Type
Operating mechanism	Completely automatic	Level Controller System	Level Controller System	Level Controller System
Dimension (L x D x H) (mm)	650 x 400 x 430	650 x 400 x 430	650 x 400 x 430	650 x 400 x 1000
Weight	21 kg	21 kg	21 kg	21 kg
Power	220V, 50/60Hz	220V, 50/60Hz	220V, 50/60Hz	220V, 50/60Hz
	3 KW	6 KW	8 KW	10 KW

ULTRASONIC PIPETTE CLEANER (초음파 피펫 세척기)

This Cleaner can clean all kind of Pipette even if its shape as hollow.

This Cleaner can remove polluted material over ten times as much as rubbing by hands.

Using a detergent, pipette can be cleaned efficiently and safely.

With ultrasonic, this cleaner can wash any narrow pipe of pipette.

If a pipette basket is used, many pipettes can be cleaned.

This cleaner has long using period with its strong power and durability, Because of Piezoelectric Ceramics Oscillator.

To use siphon mechanism makes this cleaner drain automatically.

This cleaner can control the time for cleaning. (Max. 60min)

UPC series models

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	UPC-900
Cleaning Method	Ultrasonic Wave
Frequency	40 KHz
Frequency output	400 W
Timer	60 Minutes
Power supply	AC 220V, 50/60Hz
Vessel Material	Clear PVC
Basket size	Ø 180 x 700 mm
Overall Dimensions	340 x 370 x 850 mm
Weight	15 kg
Accessories	Basket, water hose (1.5 m), Power cord



PYREX ULTRAPURE WATER SYSTEM (순수제조장치)

The high-performance PYREX ULTRAPURE WATER SYSTEM with its advanced features & user-friendly design

PRX series models



Feature

- ☐ HPLC, ICP, AA, Spectroscopy
- ☐ Electrophoresis/Biotechnology
- ☐ Pyrogen free Bioresearch grade
- ☐ TOC <5-10ppb
- ☐ Heavy metals <0.1-1ppb
- ☐ Particle removal >0.2µm
- ☐ Tissue & Cell culture
- ☐ BOD
- ☐ Resistivity >18.3MΩ-cm
- ☐ TDS <5-10ppb
- ☐ Silicates <5-10ppb

GENERAL SPECIFICATIONS

Rejection Rates of Distillation (Type II)	Monovalent Ions : 99% or more
	Polyvalent Ions : 99% or more
	Particles : 99% or more
	Most organics : 99% or more
Ultra Pure Water (Type I)	Bacteria : 99% or more
	TOC : <1ppb
	Particles (@ 0.2µm) : <1mL
	Endotoxin : <1eu/mL
	Bacteria : <1cfu/mL
	Silicate : <0.1ppb
	Heavy Metal : <1ppb

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL		PRX-701	PRX-702	PRX-703
Product Rate	Distillation	3.5 Liters / hr	7 Liters / hr	10 Liters / hr
	UP Water	1.5 Liters / min	1.5 Liters / min	1.5 Liters / min
Product Quality	Distillation	1MΩ-cm	1MΩ-cm	1 MΩ-cm
	UP Water	18.2 MΩ-cm	18.2 MΩ-cm	18.2 MΩ-cm
Display		Digital Display	Digital Display	Digital Display
Controller		Microprocessor Type	Microprocessor Type	Microprocessor Type
Function		Level Controller System for Distillation	Level Controller System for Distillation	Level Controller System for Distillation
Dimension (W x D x H) (mm)		650 x 400 x 1,000	650 x 400 x 1,000	650 x 400 x 1,000
Weight		50 kg	50 kg	50 kg
Power		220V, 50/60Hz, single phase	220V, 50/60Hz, single phase	220V, 50/60Hz, single phase
		3 KW	6 KW	10 KW

REVERSE OSMOSIS & ULTRAPURE WATER PURIFICATION SYSTEM

The high-performance REVERSE OSMOSIS & ULTRAPURE WATER PURIFICATION SYSTEM with its advanced features & stylish & user-friendly design

WPS series models



The superior features of FTWPS-501/FTWPS-502/ FTWPS-503
Excellent LCD Digital display enables end-users to easily check and monitor operating state

LCD Digital display

Easy control mechanism for the Water Tank

Indication function to notice replacement for RO-Pack

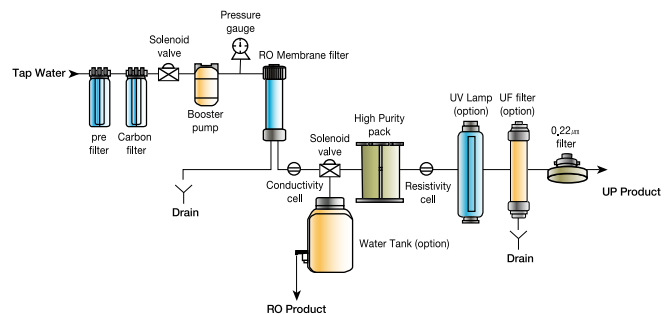
Easy setting function for replacement time of RO-Pack

Indication function to notice replacement for HP-Pack

Easy setting function for replacement time of HP-Pack

Reverse Osmosis & Ultra Purification Water System

This system has tap water or subterranean water pass through the high-efficiency Reverse Osmosis Membrane of its modular water degree 100 so that it eliminates every kind of impurities to produce pure water and this pure water goes by way of the activated carbon and ion exchange resin and finally produce the highest-grade ultra pure water.

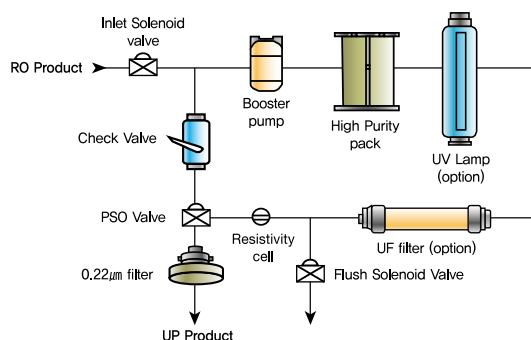


INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	WPS-501	WPS-502	WPS-503
Product flow rate (RO, UP)	Max. 15 Liters / Hr	Max. 30 Liters / Hr	Max. 50 Liters / Hr
Water quality display	* Pure Water (RO): 0 to 25 $\mu\text{S}/\text{cm}$ (Type III Grade) * Ultra Pure (UP): UP to 18.3 $\text{M}\Omega\text{-cm}$ (Type I Grade)		
Display	LED Digital Display	LED Digital Display	LED Digital Display

INDIVIDUAL SPECIFICATIONS PER MODEL

TYPE	BASIC	PLUS	BIO	MULTI
Feature	- 0.2 μm Final filter	STANDARD	STANDARD	STANDARD
	- 254/185 UV Lamp	STANDARD		STANDARD
	- MW 5,000 UF filter		STANDARD	STANDARD
Feature	- TOC (ppb)	5-10	1-5	5-10
	- Silicate (ppb)	<0.1	<0.1	<0.1
	- Bacteria (cfu/mL)	<1	<1	<1
	- Particles (>0.22 μm)	<1 / mL	<1 / mL	<1 / mL
	- Particles (>0.22 μm)	<1 / mL	<1 / mL	<1 / mL
Included Filter & Accessories	* Pre filter * A/C filter * RO Pack * HP Pack * 0.22 μm final filter * Level sensor * Power cord			
Dimension (L x D x H) (mm)	450 x 400 x 580	450 x 400 x 580	450 x 400 x 580	450 x 400 x 580
Supply Voltage, Frequency & Power Consumption	AC 230V, 50/60Hz, 60W			



SPECIFICATIONS

MODEL	WPS-901
Product flow rate (UP)	1.5 Liters / Min
Product water quality	UP to 18.3 M Ω -cm (Type / Grade)

INDIVIDUAL SPECIFICATIONS PER MODEL

TYPE	BASIC	PLUS	BIO	MULTI
Feature	- 0.2µm Final filter	STANDARD	STANDARD	STANDARD
	- 254 / 185 UV Lamp	STANDARD		STANDARD
	- MW 5,000 UF filter		STANDARD	STANDARD
Feature	- TOC (ppb)	5-10	1-5	5-10
	- Silicate (ppb)	< 0.1	< 0.1	< 0.1
	- Bacteria (cfu/mL)	< 1	< 1	< 1
	- Particles (>0.22µm)	< 1 / mL	< 1 / mL	< 1 / mL
Dimension (L x D x H) (mm)	450 x 400 x 580			
Supply Voltage & Frequency	AC 230V, 50/60Hz, 70W			

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	WPS-801	WPS-802	WPS-803
Product rate (Max)	15 Liters / Hr	30 Liters / Hr	50 Liters / Hr
Product Water Quality	0~25µs / cm		
Type	Cabinet Type		
Display	LED Digital Display		
Controller	Microprocess touch controller		
Safety Functions	Automatic Motor ON / OFF function		
	High level cut-off, Low level Operating		
	Shut-off the water supply		
	flushing function		
Raw water	City Water & Ground Water		
Included Cartridge	Pre filter, A / C filter, RO Membrane		
Dimension (W x D x H) (mm)	400 x 300 x 550		500 x 400 x 700
Power	AC 220V, 70W		

Ultra Purification Water System

This high-efficiency Ultra Purification System uses RO(Reverse Osmosis) water or distilled water as its fundamental water and has this fundamental water pass through HP-Pack and 0.22µm filter so that this system produces ultra pure water of the highest grade which is most commonly used in every kind of laboratory and institute.

The Cartridge of the high quality eliminates various kind of ION and organic matter Very effectively eliminates all sorts of organic matter, inorganic matter, chlorine element and odor

The Conditions of the fundamental water : RO (Reverse Osmosis) water or distilled water at the temperature in range of 10~25 °C

The Prominent Strong Points Indication for the optimum replacement time of HP-PACK Easy to set the replacement time of HP-PACK through its user-oriented function

Reverse Osmosis based on Pure water system

This system has tap water or subterranean water pass through the high-efficiency Reverse Osmosis Membrane of its modular water degree 100 so that it eliminates all sorts of impurities to produce the distinguished RO(Reverse Osmosis) water which is much better than normal distilled water and with its very competitive & strong points that end-users can easily operate and experience economic maintenance, this system is most commonly used by our diversified customers in the world.

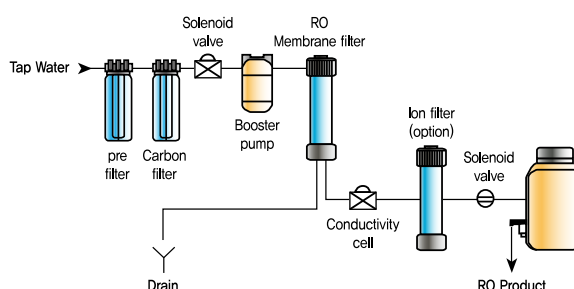
The most competitive strong points

Easy to perfectly control the Water Tank

Great function to protect pump when water supply is suddenly cut off

Indication for the optimum replacement time of RO-PACK

Easy to set the replacement time of RO-PACK through its user-oriented function



ICE MAKER (제빙기)

The high-performance ICE MAKER producing purified kernel ice

ICM series models

This high-performance ICE MAKER is continuously producing purified kernel ice and it can be produced in two different types as follows: snow or flake type.

Its ice quality is very fine and solid so end-users can use this purified kernel ice for multiple purpose, such as laboratory, edibility and so on.

Both ice-making system and its storage container are built into a single complete unit so in case that its storage container, it automatically start operating as well.

Quality of ice is very fine and solid so it not easily melted in such a short time.

The produced ice is edible (suitable to eat) and it also tastes good.

No need to have any kind of separate ice slicer as this high-performance ICE MAKER produces very fine & solid kernel ice directly from water.

Very Recommendable ice maker for various kind of laboratory, research center and hospital.

Multi-thickness ice can be produced for different needs of end-user (Very fine & solid ice with good taste of three different thickness can be produced through user-friendly control system).

GENERAL SPECIFICATIONS

Ice-Manufacturing Mechanism	Cooling Drum Rotation type
Ice Storage Capacity	35 Liters
Thickness of Ice	Small, Medium, Large
Water Feeding	Directly supplied from valve
Materials	Internal Material : Stainless Steel
	External Material : Steel Plate with Powder coating
Power Supply	AC 220V, 60Hz or 50Hz

INDIVIDUAL SPECIFICATIONS PER MODEL

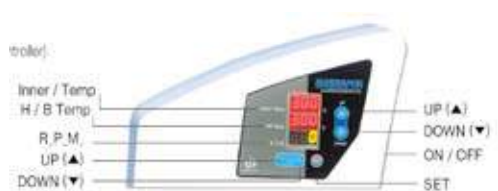
MODEL	ICM-80	ICM-140	ICM-300
Dimension (W x D x H) (mm)	320 x 530 x 730	420 x 520 x 930	550 x 635 x 1230
Product	45 kg/day	100 kg/day	220 kg/day
Weight	50 kg	55 kg	95 kg

ROTARY EVAPORATOR (회전 농축 장비)

HS series models



HS-2005S-N



HS-2005V-N

ROTARY EVAPORATOR BATH

- ☐ 6 Different type of flasks are attachable
- ☐ Slant type condenser
- ☐ Digital interior temperature measure and display(It catches the temperature changes caused by the interior pressure drops)
- ☐ Motorized UP-DOWN control switch
- ☐ Easy to utilize standard distillation solution
- ☐ If the amount of water goes down under the certain threshold in the heating bath, the system automatic cally turns off its power for the safety purpose.
- ☐ Double jacketed bath body(Safe to touch)

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	ROTARY EVAPORATOR	BATH
	HS-2005V-N	HS-2005S-N
Dimensions	730 x 410 x 630 mm	245 x 120 mm (Øx H)
Speed Range	20~280 RPM	
Control	Digital display	
Temp Range		Amb + ~ 180°C
Flask Range	50~3000 mL	
Bath Volume		4.3 mL
Power consumption		1000 W
Power Source	AC 220V, 50/60HZ, 2.5A	AC 220V, 50/60HZ, 4.5A
Weight	19.5 kg	2.8 kg

COOLING WATER CIRCULATOR

As a source of cooling water to the Rotary Evaporator and as a heat-emitting equipment it supplies sufficient quality of cooling water as highly efficient chemical pumps are installed and does not contaminate other instruments as it does not get corroded.

INDIVIDUAL SPECIFICATIONS PER MODEL

MODEL	HS-3005N	HS-3005
Capacity	4 Liters	15 Liters
External Dimension (W x H x D) (mm)	250 x 510 x 510	350 x 385 x 840
Dimensions (Bath)	Ø190 x 200 mm	Ø280 x 270 mm
Temp Range	Down to -20°C	
Controller	FND controller	
Refrigerator	1/3 HP	3/4 HP
Refrigerant	134 A	
Power Consumption	334 W	680 W
Circulator Pump	Magnet 20 W, Max. Flow: 15 Liters / min	
Power Supply	AC 230V, 50/60HZ	
Weight	28 kg	40 kg

HS series models



VACUUM CONTROLLER (진공 콘트롤)

HS-0245

Solid state module maintains precise control($\pm 3\%$) of the system vacuum by cycling the pump on/off as required.

Adjustable for any level between 1mmHg and 760mmHg

MODEL	HS-3003
Power source	AC 220V, 50/60Hz
Dimensions (W x D x H) (mm)	160 x 130 x 95
Weight	1.8 kg



DIAPHRAGM VACUUM PUMP (진공 펌프)

HS-0153(CE)

Diaphragm Pumps for Air, Gases and Vapors

- ☐ Therefore suitable for highly aggressive and corrosive gases of vapors
- ☐ 100% oil-free transfer
- ☐ Chemically-resistant
- ☐ Maintenance-free
- ☐ Pure transfer, evacuation and compression
- ☐ Highly compatible with vapors and condensation
- ☐ Environmentally friendly

MODEL	HS-3003
Delivery (L/min)	20
Ultimate vacuum (mmHg)	750
Connectors for tube (mm)	OD 10
Voltage/Frequency	230V, 50Hz
Power	120 W
Operating current	0.5 A
Weight	9.3 kg
Dimensions (L x H x W) (mm)	270 x 180 x 220
Material	PE or PTFE

mmHg	500	550	600	650	700	760
kPa	66.661184	73.327303	79.993421	86.659539	93.325658	101.325
hPa	666.611842	733.273026	799.934211	866.595395	933.256579	1013.25
atm	0.657895	0.723684	0.789474	0.855263	0.921053	1
mb	666.611842	732.273026	799.934211	866.595395	933.256579	1013.25
Pa	66661.1842	73327.3026	79993.4211	86659.5395	93325.6579	101325

ELECTRIC ASPIRATOR (아스피레이터)

HS-3000

- ☐ Excessive consumption of water may be reduced that can happen when city piped water is used.
- ☐ Utilizing water pressure gained by motor pump, two aspirators can be installed.
- ☐ By preventing reflux of air, vacuum, filtering and vacuum distillation and possible.
- ☐ Applicable to Rotary vacuum evaporator.
- ☐ A cooling coil could be installed to prevent the loss of vacuum effect in the case when the water temperature increases (option).
- ☐ Vacuum controller could be equipped for checking degree of vacuum status during the operation.
- ☐ Bath is made of polypropylene which is strong and lasts long.



MODEL	HS-3003
Pump Capacity	18 Liters/min x 2 EA
Material of Bath	Polypropylene
Power source	AC 220V, 50/60Hz, 0.7A
Bath Capacity	8 Liters
Material of Aspirator	Metal 2 PCs
Dimension (W x D x H)	320 x 240 x 350 mm
Motor Power	150 W
Safety	Fuse
Weight	6 kg



COS-100 model (복합악취샘플러)

ODOR SMPLING EQUIPMENT

Feature

- ☐ Display of Temperature, %RH and Atmospheric Pressure
- ☐ USB Memory Slot
- ☐ Power : DC 12V
- ☐ Pressure : 50mm Hg
- ☐ Internal Data Logging
- ☐ Max. Flow : 13 L/min
- ☐ Weight : 8kg



KMS-100 model (포름알데히드, 휘발성 유기화합물, 악취샘플러)

MULTI SAMPLER

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Flow Range : HCHO (0.001~1.2 LPM), TVOC (0.01~0.25 LPM)
- ☐ Operation Time : Max. 13hr with DNPH cartridge and TENAX Tube
- ☐ Pump Type : Diaphragm Type
- ☐ Temperature & Pressure : 25°C/1Atm
- ☐ Battery Type : Ni-MH, 12V 2AH
- ☐ USB memory support



KMS-4000 model (석면 & 악취샘플러)

AREA AIR SAMPLER (MFM)

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Display of Instantaneous flow and volumetric flow simultaneously
- ☐ Flow temperature and pressure correction
- ☐ NI-MH battery
- ☐ Embedded flow calibration
- ☐ Operation Time : Max. 8hr
- ☐ Pump Type : Linear Type, 0~32 LPM
- ☐ Printer port and USB support
- ☐ Flow Range : 0~23.5 LPM
- ☐ Constant flow control



SARA-5100 model (석면, 악취샘플러, 지역시료채취펌프)

AREA AIR SAMPLER

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Graphic LCD
- ☐ Small and Light
- ☐ Operation Time : Max. 10hr
- ☐ Weight : 4kg
- ☐ Delayed Start
- ☐ Flow Range : 0~25 LPM
- ☐ AC/DC



KM-101 model (유량보정계)

FLOW CALIBRATOR

Feature

- ☐ Accurate Flow Calibration
- ☐ Battery Type : NI-MH, 12V 3AH
- ☐ Operation Temperature : 0~50°C
- ☐ DPU-414 Printer port
- ☐ Small and Light
- ☐ Weight : 1.5kg
- ☐ Operation Time : Max. 15hr
- ☐ Replay Out : Max. 220VAC 2A



KAS-100 model (석면펌프, 악취샘플러)

AREA AIR SAMPLER

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Small and Light
- ☐ Weight : 3.5kg
- ☐ Power Supply : AC type/220VAC/50~60Hz
- ☐ Range : 0~25L/min
- ☐ Pump : Linear type





SARA-4000S model (자동멀티시료채취펌프)

AUTOMATIC SEQUENTIAL SAMPLING SYSTEM/19" RACK TYPE

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Automatic Filter Rotation System : Max. 16ea
- ☐ 2 Different mode : Instantaneous flow mode and volumetric flow mode
- ☐ 32 BIT Microcontroller/Window-CE 6.0 Touch LCD
- ☐ Short Message Service(SMS) support
- ☐ Pump Type : Diaphragm, 0~28 LPM
- ☐ Range : 0~25 LPM
- ☐ Operation Temperature : 0~50℃
- ☐ 19" Rack Type



SARA-4000MS model (멀티석면샘플러)

AUTOMATIC SEQUENTIAL SAMPLING SYSTEM/PORTABLE TYPE

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Portable Unit (combined with SARA-4000S)
- ☐ Dimensions : 483mm x 178mm x 523mm
- ☐ Wight : 12kg



GDS-100 model (가스희석기)

GAS DILUTION SYSTEM

Feature

- ☐ 3 Different Operation Mode : Manual, Semi-Auto and Schedule
- ☐ Touch Graphic-LCD
- ☐ User-friendly Interface
- ☐ USB memory sup0port
- ☐ RS-485 Communication
- ☐ Mass Flow Controller



IAQ-MONITOR model (벽걸이형 실내공기질 모니터)

Indoor Air Quality Monitor

Feature

- ☐ CO2, Temperature and %RH Monitoring
- ☐ Optional Sund Level Measurement
- ☐ RS-485 Communication
- ☐ Date and Time Display



KAS-110 model (총부유세균 샘플러)

MICROBIAL AIR SAMPLER

TYPE APPROVAL from Korean Ministry of Environment

Feature

- ☐ Theory : Anderson Type Collision Impaction
- ☐ Head Holes : 400 holes/0.25mm diameter
- ☐ Head Size : 74mm(H) x 105mm(Dia)
- ☐ Pump type : Linear type
- ☐ Flow Range : 0~30 LPM
- ☐ Wight 3.5kg



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