

SINCE 1889



Digest Catalog of Drying Oven

Natural and Forced Convection Ovens | Clean Ovens | Vacuum Drying Ovens

We have gathered the best-selling standard models.



Yamato Scientific Co., Ltd.

Forced convection type, standard model with program operation

Programmable Forced Air Convection Ovens



Forced convection oven

DKN302/402/602/612/812/912

- Forced convection circulation
- Auto overheat prevention
- Overheat protector
- Self-diagnosis
- Key lock
- Power outage compensation
- Overcurrent ELB



This is a forced convection programmable constant temperature oven equipped with multiple functions, including a programmed operation function, and substantially improved safety functions and operability.

Operations and functions

- It is possible to perform fixed temperature operation, programm operation, quick auto-stop operation, auto-stop operation, and auto-start operation with simple operation.
- Digital setting method using the operation menu key and ▲ ▼ keys. The program controller is equipped with a repeat function.
- The sub-menu keys can be used to set the overheat protector, calibration offset, and key lock.

Safety and Maintenance

- Self-diagnostic circuit (temperature sensor error, heater disconnection, auto overheat protection function, SSR short circuit), overheat protector, ELB with overcurrent protection, key lock function, and other safety features.

Specifications

Product code	212870	212871	212872	212873	212874	212875
Model	DKN302	DKN402	DKN602	DKN612	DKN812	DKN912
Circulation method	Forced convection					
Operating temp. range	RT+10°C to 260°C			RT+10°C to 250°C		
Temp. adjustment accuracy	±1°C (at 210°C) JTM K05					
Temp. distribution accuracy	±2.5°C (at 210°C) JTM K05					
Max. temp. reaching time	Approx. 90 min.		Approx. 120 min.		Approx. 60 min.	
Internal dimensions (WxDxH)	300x300x300mm	450x450x450mm	600x500x500mm	600x500x1000mm	1070x500x1000	
External dimensions*2 (WxDxH)	410x451x670mm	560x601x820mm	710x651x870mm	710x651x1608mm	1180x651x1616	
Internal capacity	27L	90L	150L	300L	535L	
Shelf load capacity	Approx. 15kg/pc.					
Number of Shelf support step	6 steps	11 steps	13 steps	29 steps	29 stepsx2	
Shelf support pitch	30mm					
Power source 50/60Hz	AC220V 4A	AC220V 6A	AC115V 13A	AC220V 7A	AC220V 12A	AC220V 15A
Rated current	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
Weight	Approx. 35kg	Approx. 50kg	Approx. 65kg	Approx. 110kg	Approx. 190kg	
Shelf plate	Stainless punched metal (The lowest 1 pc. is screwed, and DKN912 is left and right lowest.)					
	2 pcs.				4 pcs.	8 pcs.
Shelf suport	4 pcs.				8 pcs.	16 pcs.

Power plug is not included. The length of the power cord is about 2 meters outside the unit.
 ※1 Conditions: Temperature and humidity 23°C±5°C, 65%RH±20% (no load). Power supply voltage at 100V AC (200V).
 ※2 Do not include protrusions

Forced convection type, simple and low-cost type with fixed temperature operation

Economical Forced Convection Ovens

Forced convection oven

Check more products!



DKM300/400/600

Forced convection circulation

Auto overheat prevention

Overheat protector

Self-diagnosis

Key lock

Power outage compensation

Overcurrent ELB



27L
DKM300

90L
DKM400
(ON61 type stand is optional.)

150L
DKM600
(ON61 type stand is optional.)

A simple-to-operate air convection constant temperature oven.

Easy operations and functions

- Can perform fixed temperature operation, quick auto stop operation, auto stop operation, and auto start operation with simple operation.
- Digital setting method using dedicated operation menu keys and ▲▼ keys.
- Independent overheat protection, calibration offset, and key lock settings are available.

Safety and maintenance

- Self-diagnostic circuit (temperature input error), power failure compensation function, calibration offset function, overcurrent leakage breaker, independent overheat protection, and other safety features are provided.

Specifications

Product code	212876	212877	212878
Model	DKM300	DKM400	DKM600
Circulation method			
Forced convection			
Performance※1	Operating temp. range		
	RT+10°C to 260°C		
	Temp. adjustment accuracy		
	±1°C (at 210°C) JTM K05		
Standard	Temp. distribution accuracy		
	±2.5°C (at 210°C) JTM K05		
	Max. temp. reaching time		
	Approx. 60 min. (RT +10°C to 210°C), Approx. 90 min. (RT +10°C to 260°C)		
Accessories	Internal dimensions (WxDxH)		
	300×300×300mm		
	450×450×450mm		
	600×500×500mm		
	External dimensions※2 (WxDxH)		
	410×451×670mm		
	560×601×820mm		
710×651×870mm			
Accessories	Internal capacity		
	27L		
	90L		
	150L		
	Shelf load capacity		
	Approx. 15kg/pc.		
	Number of Shelf support step		
6 steps			
11 steps			
13 steps			
Accessories	Shelf support pitch		
	30mm		
	Power source 50/60Hz		
AC220V 4A Single phase			
AC220V 6A Single phase			
AC220V 7A Single phase			
Accessories	Rated current		
	Weight		
Approx. 35kg			
Approx. 50kg			
Approx. 65kg			
Accessories	Shelf plate		
	Stainless punched metal (The lowest 1 pc. is screwed), 2 pcs.		
Accessories	Shelf support		
	4 pcs.		

Power plug is not included. The length of the power cord is about 2 meters outside the unit.

※1 Conditions: Temperature and humidity 23°C±5°C, 65%RH±20% (no load). Power supply voltage at 100V AC.

※2 Do not include protrusions

Q & A DKN/DKM series

Q What is the difference between DKN and DKM series and how to record the temperature.

Both are forced convection oven, but there is a difference between DKN with program operation and DKM without program operation. If you want to record the temperature, we recommend the DKN with the temperature output terminal in the optional setting.

Q What is the difference between the forced convection type and the natural convection type and the merit.

In the forced convection type, heated air is circulated through the chamber by a fan. Therefore, it is characterized by temperature uniformity and high drying speed. We recommend using a natural convection system because powdered materials can fly around.

Q What is the meaning of JTM K05?

JTM is an abbreviation for Japan Testing Machinery Manufacturers Association, and it indicates that the product has been inspected and cataloged in accordance with the performance indication method and performance test method for K05 high temperature chambers specified by the association. At present, in addition to the JTM K05, our company also has models whose performance has been verified in accordance with JIS.

Q Can I use it as a labware instrument drying oven?

We have a dryer specially designed for labware instrument, and on page 10 on this catalog, you will find a product developed through industry-academia collaboration, the safe labware instrument dryer. Other DG series labware instrument dryers are introduced at the end of this catalog.

Forced convection

Clean oven

Vacuum oven

Natural convection

Large drying oven with high precision 260°C/360°C, customization available.

With high accuracy temperature control and exhaust damper

Fine Oven



DF412/612 • DH412/612

- Forced convection circulation
- Auto overheat prevention
- Overheat protector
- Self-diagnosis
- Key lock
- Power outage compensation
- Overcurrent ELB



91L
DF412
(OP46 type stand is optional.)



216L
DH612
(OP66 type stand is optional.)

Side flow for uniform heat treatment.

- A variable air speed function is provided as standard to suppress heat treatment of lightweight samples and scattering of powder.
- The display visibility and operability of the operation panel are improved by installing a V-type controller, and the monitor display of power consumption, CO₂ emission, and heater operation volume, and variable air speed function are provided as standard.
- Programmed operation function is available. (Max. 99 steps, 99 patterns, repetitive operation function)
- Quick auto stop operation function and fan error detection function are provided.
- Equipped with an exhaust damper.

Specifications

Product code	211780	211781	211782	211783	
Model	DF412	DF612	DH412	DH612	
Circulation method		Forced convection and ventilation			
Performance*1	Operating temp. range	RT+15°C to 260°C		RT+15°C to 360°C	
	Max. temp. reaching time	Approx. 50 min. (270°C setting 260°C pass time)		Approx. 60 min. (370°C setting 360°C pass time)	
	Temp. control accuracy	±0.1°C (at 260°C) JTM K05		±0.2°C (at 360°C) JTM K05	
	Temp. fluctuation	1.0°C (at 260°C) JIS		2.0°C (at 360°C) JIS	
	Temp. distribution accuracy	±1.5°C (at 260°C) JTM K05		±2.5°C (at 360°C) JTM K05	
Standard	Temp. gradient	10°C (at 260°C) JIS		12°C (at 360°C) JIS	
	Internal dimensions (WxDxH)	450x450x450mm	600x600x600mm	450x450x450mm	600x600x600mm
	External dimensions*2 (WxDxH)	1050x630x850mm	1200x780x1000mm	1050x630x850mm	1200x780x1000mm
	Internal capacity	91L	216L	91L	216L
	Power source 50/60Hz	AC220V 10A Single-phase	AC220V 15A Single-phase	AC220V 13A Single-phase	AC220V 19A Single-phase
	Rated current				
	Heater	2.1kW	3.0kW	2.7kW	3.75kW
	Number of Shelf support step	9 steps			
	Shelf support pitch	45mm	60mm	45mm	60mm
	Shelf load capacity	Approx. 30kg/pc.			
Accessories	Weight	Approx. 112kg	Approx. 156kg	Approx. 112kg	Approx. 156kg
	Shelf plate/Shelf support	2 pcs. / 4 pcs. (Stainless steel wire)	3 pcs. / 6 pcs. (Stainless steel wire)	2 pcs. / 4 pcs. (Stainless steel wire)	3 pcs. / 6 pcs. (Stainless steel wire)

Power plug is not included. The length of the power cord is about 3 meters outside the unit.

*1 Conditions: temperature and humidity : 23°C±5°C, 65%RH±20%, no load, circulating operation (damper fully closed)

*2 Do not include protrusions

Space saving realized by vertical design, for from production lines to R&D use.

Large capacity

Fine Oven (Tall)



DFS710/810·DHS710/810 Forced convection circulation Auto overheat prevention Overheat protector Self-diagnosis Key lock Power outage compensation Overcurrent ELB



418L
DFS710

558L
DHS810

In addition to the high-precision control system, the rectifier plate has been improved to improve the temperature control performance. Equipped with a V-type controller to improve the visibility and operability of the operation panel, and standard features such as power consumption and CO₂ emission monitoring functions.

- Improved rectifier plate to reduce overshoot and shorten temperature rise time.
- The use of security casters prevents contamination of the wheels during transport and movement.
- A programmed operation function with up to 99 steps is provided.
- The power failure compensation mode selection is equipped with functions such as saving and calling of user setting information.
- Equipped with wire type shelves, built-in paperless touch panel recorder, etc. (Optional)
- Variable wind speed function as standard equipment suppresses heat treatment of lightweight samples and scattering of powder.

Specifications

Product code	211249	211250	211251	211252	
Model	DFS710	DFS810	DHS710	DHS810	
Circulation method		Forced convection and ventilation			
Performance ^{*1}	Operating temp. range	RT+15°C to 260°C		RT+15°C to 360°C	
	Max. temp. reaching time	Approx. 40 min. (at 260°C)		Approx. 50 min. (at 360°C)	
	Temp. control accuracy	±0.2°C (at 260°C) JTM K05		±0.3°C (at 360°C) JTM K05	
	Temp. fluctuation	3.0°C (at 260°C) JIS		5.0°C (at 360°C) JIS	
	Temp. distribution accuracy	±2°C (at 260°C) JTM K05		±3°C (at 360°C) JTM K05	
Standard	Temp. gradient	20°C (at 260°C) JIS		25°C (at 360°C) JIS	
	Internal dimensions (WxDxH)	620x750x900mm	620x750x1200mm	620x750x900mm	620x750x1200mm
	External dimensions ^{*2} (WxDxH)	770x965x1580mm	770x965x1880mm	770x965x1580mm	770x965x1880mm
	Internal capacity	418L	558L	418L	558L
	Power source 50/60Hz	AC220V Single-phase	AC220V/380V Three-phase	AC220/380V Three-phase	AC220/380V Three-phase
	Heater	4.5kW	5.4kW	5.4kW	6.0kW
	Number of Shelf support step	27 steps	37 steps	27 steps	37 steps
	Shelf support pitch	30mm			
Shelf load capacity	Approx. 30kg/pc.				
Accessories ^{*1}	Weight	Approx. 175kg	Approx. 190kg	Approx. 175kg	Approx. 190kg
	Shelf plate/Shelf suport	2 pcs. / 4 pcs. (Stainless steel wire)		2 pcs. / 4 pcs. (Stainless steel wire)	

Power plug is not included. The length of the power cord is about 4 meters outside the unit.

*1 Conditions: temperature and humidity : 23°C±5°C, 65%RH±20%, no load, circulating operation (damper fully closed)

*2 Do not include protrusions

Q & A DF/DH·DFS/DHS series

Q The forced convection oven and the precision oven have almost the same internal capacity, but what are the differences in usage?

Since the concept of the fine oven is for heat treatment and testing, it is designed to have better temperature distribution accuracy (e.g. DF series ±1.5°C) than the forced-air type (e.g. DKN series ±2.5°C).

Q What should do when smell comes out of the workpiece during heat treatment and fills the laboratory?

The fine oven is equipped with an exhaust damper, so it can be connected to a duct and exhausted outside the room. This also helps to shorten the temperature drop after the test.

Q I want to heat treat a sample that may be inflammability.

For the fine oven, we have a safety fine oven with an explosion vent. In addition, we accept the custom with the digestion function for the battery (increased-safety explosion-proof).

Q It is equipped with a variety of safety features, but are there any operational considerations?

In addition to the precautions in the instruction manual, we recommend that you open the door with your right hand (for the left hinge) to avoid exposure to hot air.

Forced convection

Clean oven

Vacuum drying oven

Natural convection

AC220V, 300°C compact clean oven, also maintains Class 100 during temperature rise and decrease.

Compact Clean Ovens

Clean Oven (with Heat-resistant HEPA)

Check more products!



DT300/300H (Patent pending)

Forced convection circulation

Auto overheat prevention

Overheat protector

Self-diagnosis

Key lock

Power outage compensation

Overcurrent ELB



27L
DT300

27L
DT300H

(Low floor stand with casters, manual exhaust valve, N₂ gas supply unit is optional)

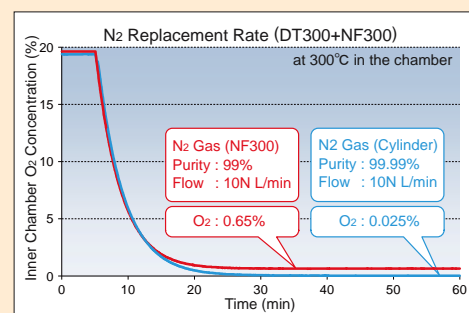
Compact clean oven (Model: DT300)+ Nitrogen gas generator (Model NF300)

When combined with the nitrogen gas generator NF300 type, it can be used under low oxygen conditions.



DT300

NF300



Note : The replacement rate depends on the N₂ gas supply flow rate and temperature.

- Compact tabletop clean oven that can be installed anywhere.
- Two units can be stacked on top of each other. (Using the optional stacking bracket)
- Maximum operating temperature is 300°C despite its small size.
- Cleanliness is Class 100 (JIS Class 5) not only at stable temperature but also during temperature rise and decrease. (Model DT300H)

Specifications

Product code	212614	212615	
Model	DT300	DT300H	
Circulation method: Forced convection			
Operating temp. range: RT+20°C to 300°C			
Max. temp. reaching time: Approx. 150 min.			
Performance ^{※1}	Temp. control accuracy	±0.3°C (at 100°C, 200°C, 300°C) JTM K05	
	Temp. fluctuation	1.0°C (at 100°C, 200°C), 2.0°C (at 300°C) JIS	
	Temp. distribution accuracy	±2.0°C (at 100°C), ±4.0°C (at 200°C, 300°C) JTM K05	±1.5°C (at 100°C), ±2.5°C (at 200°C), ±3.0°C (at 300°C) JTM K05
	Temp. gradient	5°C (at 100°C), 10°C (at 200°C), 12°C (at 300°C) JIS	3°C (at 100°C), 5°C (at 200°C), 7°C (at 300°C) JIS
	Cleanliness	Class 100 (JIS class 5 : target particle size: 0.5µm) (when temperature is stable)	Class 100 (JIS class 5 : target particle size: 0.5µm) (always)
Standard	Internal dimensions (WxDxH)	300x300x300mm	
	External dimensions ^{※2} (WxDxH)	500x720x840mm	
	Internal capacity	27L	
	Power source 50/60Hz	AC220V 6A Single-phase with step-down transformer	
	Number of Shelf support step	6 steps	
	Shelf support pitch / Shelf load capacity	30mm / Approx. 15kg/pc	
Weight	Approx. 87kg	Approx. 86kg	
Accessories Shelf plate / Shelf support	2 pcs. / 4 pcs. (Stainless steel wire)		

Power plug is not included. The length of the power cord is about 2 meters outside the unit.

※1 Conditions: temperature and humidity : 23°C±5°C, 65%RH±20%, no load, Power supply voltage at 100V

※2 Do not include protrusions

Class 100 cleanliness, clean room installation possible

Class 100

Clean oven

Check more products!



DE411/611 • DT411/611

Forced convection circulation

Auto overheat prevention

Overheat protector

Self-diagnosis

Key lock

Power outage compensation

Overcurrent ELB



91L
DE411

216L
DT611

The display visibility and operability of the operation panel have been improved by installing a V-type controller, and the power consumption and CO₂ emission monitoring functions are equipped as standard.

- Adoption of anti-fouling casters (to prevent wheel contamination during transport and movement).
- 3-color display in the differential pressure gauge improves visibility of HEPA filter replacement time.
- The addition of an anti-phase (reverse phase) relay improves safety by detecting incorrect power supply wiring during installation.
- Improved usability by changing the product height (DE/DT411 type approximately 200mm lower than the conventional model).
- The cable hole diameter has been changed from ϕ 30 to ϕ 33 compared to the previous model (power plug can be pulled in).
- More options than conventional models (cage shelves and simplified clean room support added).

Specifications

Product code	212610	212611	212612	212613				
Model	DE411	DE611	DT411	DT611				
Circulation method	Forced convection							
Performance*	Operating temp. range	RT+30°C to 260°C		RT+30°C to 360°C				
	Max. temp. reaching time	Approx. 70 min. (at 260°C)		Approx. 80 min. (at 360°C)				
	Temp. control accuracy	±0.3°C (at 260°C) JTM K05		±0.3°C (at 360°C) JTM K05				
	Temp. fluctuation	1.0°C (at 260°C) JIS		1.0°C (at 360°C) JIS				
	Temp. distribution accuracy	±2.5°C (at 260°C) JTM K05		±4.0°C (at 360°C) JTM K05				
	Temp. gradient	10°C (at 260°C) JIS		20°C (at 360°C) JIS				
Cleanliness	Temperature stability class 100							
Standard	Internal dimensions (WxDxH)	450x450x450mm	600x600x600mm	450x450x450mm	600x600x600mm			
	External dimensions*2 (WxDxH)	700x1025x1570mm	850x1175x1720mm	700x1025x1570mm	850x1175x1720mm			
	Internal capacity	91L	216L	91L	216L			
	Power source 50/60Hz	AC220/380V Three phase		AC220/380V Three phase	AC220/380V Three phase			
	Heater	2h.5kW	3.6kW	3.6kW	5.2kW			
	Number of Shelf support step	12 steps	17 steps	12 steps	17 steps			
Weight	Approx. 200kg	Approx. 270kg	Approx. 200kg	Approx. 270kg				
Accessories Shelf plate/Shelf support	2 pcs. / 4 pcs. (Stainless steel wire)		3 pcs. / 6 pcs. (Stainless steel wire)		2 pcs. / 4 pcs. (Stainless steel wire)		3 pcs. / 6 pcs. (Stainless steel wire)	

Power plug is not included. The length of the power cord is about 2 meters outside the unit.

*1 Conditions: Temperature and humidity 23°C±5°C, 65%RH±20% . Power supply voltage at 100V AC, atmospheric pressure of 86kPa to 106kPa, and no load.

*2 Do not include protrusions

Q & A DT•DE series

Q When do you use a clean oven?

It is used for baking and drying of semiconductors, electronic components, sensors, and optical lenses. A HEPA filter is installed in the oven to realize class 100. Installation in a clean room is also available as an option.

Q Can you tell me more about the cleanliness class 100 (when stable)?

The international standard ISO specifies that there should be no more than 100 particles of 0.5 μ m or larger contained in 1ft³ (approx. 28L) of air. The clean oven is classified as Class 100 when the temperature is stable. The DT300H achieves Class 100 even when the temperature rises and declines, providing even higher particle control.

Q I want to bake a workpiece that does not like oxidation. Please tell me the options.

All clean ovens have the option of N₂ gas supply supply unit and nitrogen generators are also available. Other communication systems, such as external communication and output terminals, are also available as options, and we accept orders for tabletop labs (100V), such as those installed in clean benches, as well as custom line applications.

Forced convection

Clean oven

Vacuum drying oven

Natural convection

Compact type with program operation function for fast temperature rise time

Benchtop

Vacuum Drying Oven

Check more products!



DP200/300

- Auto overheat prevention
- Overheat protector
- Self-diagnosis
- Key lock
- Power outage compensation
- Overcurrent ELB



10L
DP200

27L
DP300

Vacuum dryer designed to meet a wide range of vacuum drying applications. Speeds up the temperature rise time compared to our conventional ovens. Easy to operate.

- The unique Z-control function, which supplements the conventional P.I.D. control, reduces the temperature rise time by up to 37% (compared to our conventional products) while suppressing overshoot. Temperature stability during low-temperature operation is also improved.
- Easy-to-see display and easy-to-use operation panel.
- Equipped with a power consumption/CO₂ emission monitoring function.
- Various operation modes : Programmed operation, auto-start/auto-stop operation, timer function, calibration offset function, and various other support functions are provided as standard.
- Input/output functions (optional) : 4-20mA temperature output, external communication (RS485) terminal, alarm output, operation signal, time up, event.
- Equipped with safety devices : Detects heater disconnection in single unit to prevent abnormal operation due to disconnection. Independent overload protector and leakage breaker are standard equipment.
- The wide, easy-to-see observation window is equipped with a polycarbonate protective cover for safety.

Specifications

Product code	212156	212157	
Model	DP200	DP300	
Circulation method	Vacuum drying by decompressed chamber direct heating		
Performance ^{*1}	Operating temp. range	40°C to 240°C	
	Operating vacuum range	101 to 0.1kPa (760 to 1 Torr)	
	Temp. adjustment accuracy	±1°C (at 240°C) JTM K05	
	Temperature fluctuation	2.0°C (at 240°C) JIS C60068	
	Max. temp. reaching time	Approx. 60 min.	
Standard	Max. temp. reaching time	Approx. 120 min.	
	Internal dimensions (WxDxH)	200x250x200mm	300x300x300mm
	External dimensions ^{*2} (WxDxH)	400x410x682mm	510x460x782mm
	Internal capacity	10L	27L
	Number of Shelf support step / Shelf support pitch	3 steps (Fixed) / 63mm	4 steps (Fixed) / 71mm
Power source 50/60Hz	AC115/220V Single-phase with step-down transformer		
Weight	Approx. 45kg	Approx. 72kg	
Accessories	2 shelf plates (stainless steel punched metal), load capacity : 15kg/pc.		

Power plug is not included. The length of the power cord is about 2 meters outside the unit. () in the Power Supply column indicates the breaker capacity and the power supply capacity.

*1 Conditions: Based on rated power supply voltage, room temperature 23°C±5°C, humidity 65%RH±20%, and no load. Operating environment temperature : 5 to 35°C.

*2 Do not include protrusions

Use a vacuum pump with a rated displacement of 50 L/min or more.

Q & A DP series

Q What kind of equipment is vacuum drying oven?

This equipment is used to dry objects by placing them in a sealed container, using a vacuum pump to reduce pressure, heating the sealed container under vacuum (reduced pressure) conditions, and using radiation heat to dry the objects.

Q What is the basic principle (mechanism) of the vacuum drying oven.

Using the principle that water vaporizes at 100°C or less under low atmospheric pressure, water can be removed without raising the temperature. In addition, vacuum (reduced pressure) conditions have a lower oxygen concentration than atmospheric conditions, making it difficult to oxidize the surface even when heat is applied, which speeds up the drying process for objects that are sensitive to heat and oxidation.

Q How should I select a vacuum pump?

When using samples containing a large amount of water or organic solvents, be sure to install a cold trap in the piping between the vacuum drying oven and the vacuum pump. Or consider using a dry pump.

Forced convection

Clean oven

Vacuum drying oven

Natural convection

Large capacity type with fast temperature rise time and safety-enhanced programmed operation function

Vacuum Drying Oven

Check more products!



DP410/610

- Auto overheat prevention
- Overheat protector
- Self-diagnosis
- Key lock
- Power outage compensation
- Overcurrent ELB



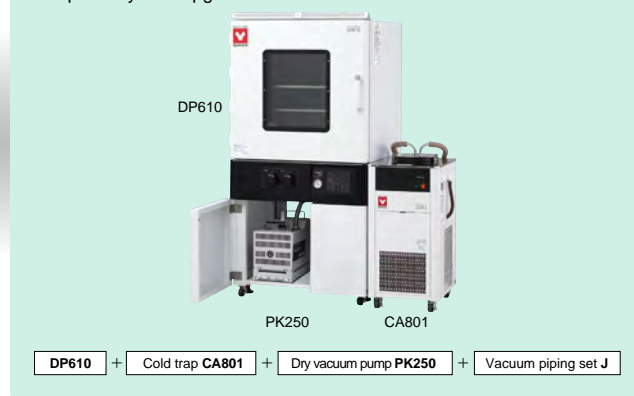
91L
DP410



216L
DP610

POINT!

Example of system upgrade



This is a high-volume processing type designed to meet a wide range of vacuum drying applications. Workability and safety are also improved by securing space for the vacuum pump, adopting a quick coupling piping system, and equipping an independent overheat prevention circuit.

- The unique Z control function, which supplements the conventional P.I.D. control, reduces the temperature rise time by up to 37% (compared to our conventional products) while suppressing overshoot. Temperature stability during low-temperature operation is also improved.
- Equipped with a power consumption/CO₂ emission monitoring function.
- Various support functions such as programmed operation, auto-start/auto-stop operation, timer function, and calibration offset function are provided as standard.
- Input/output functions (optional) : 4-20mA temperature output, external communication (RS485) terminal, alarm output, operation signal, time up, event
- Equipped with safety devices : Detects heater disconnection in single unit to prevent abnormal operation due to disconnection. Independent overload protector and earth leakage breaker are equipped as standard.
- The vacuum pump can be stored in the cabinet, making effective use of the limited space. A slide-type vacuum pump stand can be installed in the storage room as an option for easy maintenance.

Specifications

Product code	212158	212159
Model	DP410	DP610
Circulation method	Vacuum drying by decompressed chamber direct heating	
Performance ※1	Operating temp. range	40°C to 200°C
	Operating vacuum range	101 to 0.1kPa (760 to 1 Torr)※2
	Temp. adjustment accuracy	±1°C (at 200°C) JTM K05
	Temperature fluctuation	3.0°C (at 200°C) JIS C60068
Standard	Max. temp. reaching time	Approx. 80 min.
	Internal dimensions (WxDxH)	450x450x450mm
	External dimensions※3 (WxDxH)	670x669x1500mm
	Internal capacity	91L
	Number of Shelf support step /Shelf support pitch	4 steps(Fixed) / 105mm
	Power source 50/60Hz Rated current	AC220V 11A Single-phase
Weight	Approx. 45kg	Approx. 72kg
Accessories	2 shelf plates (stainless steel punched metal), load capacity : 15kg/pc.	

Power plug is not included. The length of the power cord is about 2 meters outside the unit.

※1 Conditions: Temperature and humidity 23°C±5°C, 65%RH±20% (no load).

※2 The attained pressure depends on the vacuum pump.

※3 Do not include protrusions.

Reduced risk of ignition due to improper use.

Fail-Safe Oven

Glassware Drying Oven

Check more products!



GDS400

DGS400/800

- Natural convection
- Overheat protector
- Self-diagnosis
- Key lock
- Power outage compensation
- Overcurrent ELB

Industry-first



93L
DGS400

445L
DGS800

Q & A DGS400/800

Q What is the difference from other glassware?

Natural convection is used for the glassware drying oven, but there are many cases of abnormal overheating due to overcrowding of glassware. Therefore, we have arranged ducts to prevent heat buildup even if glassware obstruct the airflow to ensure safety.

Q How to set temperature to dry plastic lab wares?

There is a temperatur setting chart for each material which on the front of the glassware drying oven. Please refer to it together with the heat resistant temperature of the labware itself.

● Fail-safe structure to prevent abnormal overheating

If too much sample is spread on the shelf, heat will be trapped at the bottom, resulting in a high temperature condition. There have been many incidents of plastic goods melting and catching fire. The DGS400/800 has a new arrangement of air ducts that generate an upward air flow even when too many specimens are laid out. This prevents abnormal overheating due to heat buildup.

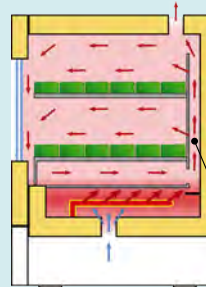
● Designed to be foolproof

If the bottom shelf is removed and the specimen is placed directly on the bottom, there is a risk of burnout. The bottom shelf has a special design and is firmly fixed in place. In addition, the bottom panel has no air vents, so even if a plastic goods melts or a small item is dropped, it will not fall directly into the heater room.

● The temperature control range is purposely limited to 110°C, which is sufficient for drying labware, to avoid careless mistakes of accidentally operating at a high temperature.

● An independent overload protection device is installed on the front of the body for easy setting and confirmation.

POINT!



■ Fail-safe oven

Air ducts are arranged to create an upward air flow even when too many samples are laid out. This prevents abnormal overheating due to heat buildup.

Air duct

A word from the originator

Of all the fire incidents that occur in university laboratories, about 14% are caused by ovens. Almost all of these fire incidents are caused by misuse by the user, but we realized that the majority of these fires can be prevented by design innovations on the equipment side, and with the cooperation of Yamato Scientific co., Ltd. we were able to create this ovens. We hope to contribute to reducing the risk of stopping research due to trivial mistakes.

Professor Hitoshi Yamamoto
Safety and Health Management Department, Osaka University

■ Specifications

Product code	211919	211920
Model	DGS400	DGS800
Circulation method	Natural convection	
Ambient temperature range	5°C to 35°C	
Operating temp. range	(RT+5°C) to 110°C	
Standard	External dimensions (WxDxH)	560x565x755mm
	Internal dimensions / internal capacity (effective internal dimensions)	460x460x450mm / Approx. 93L (430x460x395mm)
	Power source (50/60Hz)	AC220V 4A Single-phase with step-down transformer
	Weight	Approx. 45kg
	Number of Shelf support step / Shelf support pitch/Size of shelf	10 steps / 30mm / W420xD440mm
Accessories	1 shelf plate / 1 set of shelf supports (bottom shelf is fixed in the chamber)	3 shelf plates / 3 set of shelf supports (bottom shelf is fixed in the chamber)

● Specifications and appearance are subject to change without notice for improvement. The product color may look different from the actual color due to the shooting and printing ink.

Forced convection


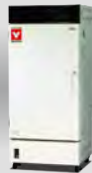




Clean oven

Vacuum drying oven





Natural convection

Other series of Ovens

Forced Convection

<p>DNE Energy saving, High precision Constant wind speed</p>  <p>210°C 90~540L</p>	<p>DNF Energy saving, High precision Variable air speed, Exhaust damper</p>  <p>260°C 27~540L</p>	<p>DN-H High temperature type</p>  <p>360°C 95~223L</p>	<p>DN-I High temperature type, Inert / High temperature type</p>  <p>360°C 95~223L</p>	<p>DF-S/DH-S Safety, with explosion preventive vent door Side flow</p>  <p>260/360°C 91~216L</p>	<p>DF/DH(Large capacity) Internal capacity: 512L/1000L Multi-power supply support.</p>  <p>200/300°C 512~1000L</p>
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Clean Ovens

<p>DES/DTS Large capacity type</p>  <p>260/360°C 327L</p>	<p>DE/DESHigh performance Class 100 high performance in both rising and declining temp. (Custom-made) HEPA filter equipped</p>  <p>200°C 91~327L</p>	<p>DKG Rapid heating/cooling Multi-power supply support</p>  <p>260°C 150~300L</p>	<p>DKS Space-saving tabletop slim type</p>  <p>210°C 20/55L</p>
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Vacuum Drying Ovens

<p>ADP201/301 Low-cost design with limited functions</p>  <p>240°C 10/27L</p>	<p>DP610P ON/OFF control of vacuum pump with automatic sequence</p>  <p>200°C 216L</p>	<p>DP810/1030 Industrial use Large capacity type</p>  <p>200°C 512/1000L</p>
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Natural Convection

<p>DS High performance type for safety Program function</p>  <p>260°C 99/162L</p>	<p>DVS Standard oven Program function</p>  <p>260°C 99/162L</p>	<p>DX Fixed temperature operation with timer</p>  <p>280/300°C 28~153L</p>	<p>DY Low-cost design with limited functions</p>  <p>280°C 28~153L</p>	<p>DXS Space-saving tabletop slim type with timer</p>  <p>210°C 20/55L</p>	<p>DG For labware drying only with timer</p>  <p>70°C 95/460L</p>
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Other Ovens and Constant temperature/humidity units.

<p>DH Forced convection type Operating temp. range : 500°C</p>  <p>500°C 216L</p>	<p>DR Natural convection Operating temp. range : 700°C</p>  <p>700°C 13.75L</p>	<p>DIR Far-infrared heating</p>  <p>360°C 216L</p>	<p>IX Energy-saving and reliable Large capacity constant temp./humidity</p>  <p>100°C Approx.120~800L</p>	<p>IW Bench top, standard type</p>  <p>150°C 22.5L</p>	<p>IH/IG Standard model for laboratory constant temp./ humidity chamber</p>  <p>85°C 105L</p>
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Comparison table of drying oven

Circulation method	Type of model	Model No.	Temperature distribution accuracy	Operating temperature range	Features	Internal capacity	Functions																
							Programmed Operation	Timer	Natural convection	Automatic overheat protection	Overheat protector	Independent overheat protector	Self-diagnosis	Key lock	Backup	Power failure compensation	Overcurrent breaker	Overcurrent ELB					
Forced convection type	DN-H	411/611	±3.0°C	RT+15~360	High temperature type (360°C)	95/223	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	DN-I	411/611	±3.0°C	RT+15~360	Inert Oven	95/223	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	DH	412/612	±2.5°C	RT+15~360	Precision constant temperature, with exhaust damper	91/216	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	DHS	710/810	±3.0°C	RT+15~360	Precision constant temperature, with exhaust damper	418/558	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DH-S	412/612	±3.0°C	RT+10~360	With explosion preventive vent door, Side flow	91/216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DH	832/1032	-	RT+15~300	Large capacity, with exhaust damper, High temperature	512~1000	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DKN	302	±2.5°C	RT+10~260	Forced convection, Observation window	27~535	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DKM	300/400/600	±2.5°C	RT+10~260	Forced convection	27~150	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNE	650/650V/670/670V/850/850V	±2.0°C	RT+10~260	Energy Saving, Forced convection	150/300	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNF	301/401/411/601/611/811/911	±2.5°C	RT+10~260	Energy Saving, Forced convection·Natural convection*1	27~540	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DF	412/612	±1.5°C	RT+15~260	Precision constant temperature, with exhaust damper	91~216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DFS	710/810	±2.0°C	RT+15~260	Precision constant temperature, with exhaust damper	418/558	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DF-S	412/612	±3.0°C	RT+10~260	With explosion preventive vent door, Side flow	91/216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DKG	611/611V/811/811V	±2.5°C	RT+30~260	Rapid heating and cooling	150/300	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DKN	402/602/612	±2.5°C	RT+10~250	Forced convection	90~150	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DKN	812/912	±2.5°C	RT+10~210	Forced convection	300~535	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNE	401/411/601/611/811/911	±2.0°C	RT+20~210	Energy Saving, Constant temperature, Forced convection	90~540	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
DKS	200/300	±3.0°C	RT+10~210	Space saving, Forced convection	20~55	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
DF	832/1032	-	RT+15~200	Large capacity precision constant temperature, with exhaust damper	512/1000	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Clean oven	DT	411/611	±4.0°C	RT+30~360	High precision, Clean	91~216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	DTS	830	±5.0°C	RT+30~360	High precision, Clean	300	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DT	300	±4.0°C	RT+20~300	Compact tabletop type	27	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DT-H	300H	±3.0°C	RT+20~300	Class 100, High performance, HEPA filter equipped	27	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DE	411/611	±2.5°C	RT+30~260	High precision, Clean	91/216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DES	830	±2.0°C	RT+30~260	High precision, Clean	300	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Vacuum drying oven	DP	200/300	-	40~240	Vacuum drying, Compact	10/27	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	ADP	201/301	-	40~240	Vacuum drying	10/27	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DP	410/610	-	40~200	Vacuum drying	91/216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DP-P	610	-	40~200	Vacuum drying, Automatic sequence	216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DP	810/1030	-	0~200	Large capacity type for industrial use	512/1100	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DP-HP	610	-	40~200	Unique Z control function installed	216	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Natural convection type	DX	302/402	±10°C	RT+5~300	Natural convection	28/74	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DX	602	±10°C	RT+5~280	Natural convection	153	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DY	300/400/600	±10°C	RT+5~280	Natural convection	28~153	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DS	401/411/601/611	±5°C	RT+5~260	Natural convection, with programmed operation	99~162	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DVS	403/603	±5°C	RT+5~260	Natural convection, with observation window	99/162	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DXS	200/300	±10°C	RT+10~210	Space Saving, Natural Convection	20/55	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DG	401/801/851	-	RT+5~70	Natural Convection, Forced exhaust	95/460	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DGS	400/800	-	RT+5~110	Fail-Safe, Glassware drying	93/450	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*1 DNF811/911: Forced convection only.



The specifications and performance figures of the products listed in this catalog are presented as a user guide under general operating conditions. When using the product, please understand the contents of the instruction manual and use the product correctly. Please note that we cannot be held responsible for any damage to persons or property caused by using the product outside the conditions of use described in the instruction manual.

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For the development of scientific technologies

Yamato Scientific Co., Ltd.

www.yamato-scientific.com

Yamato Scientific Co., Ltd.

International Sales Department :

Harumi Island Triton Square Office Tower Y, 36F

1-8-11 Harumi, Chuo-ku, Tokyo 104-0053, Japan

TEL: +81-3-5548-7122 FAX: +81-3-5548-0132

<Customer Service/Technical Support> english-website@yamato-net.co.jp

Yamato Scientific Shanghai Corp.

Room 1001-1002, Block B, Xinyan Building,

No.65 Guiqing Road, Xuhui District, Shanghai, China

TEL: +86-21-6443-5319 FAX: +86-21-5452-0268

<Customer Service/Technical Support> info@yamato-shanghai.com

Yamato Scientific America Inc.

925 Walsh Ave. Santa Clara, CA 95050, U.S.A.

TEL: +1-408-235-7725 FAX: +1-408-235-7730

<Customer Service/ Customer> Service@yamato-usa.com

<Technical Support > www.yamato-usa.com