

# Vacuum Drying Ovens

## DP200/300/410/610

Operating temp. range RT +40°C~240°C  
DP200/300

Operating pressure range 101~0.1kPa

Internal capacity 10L DP200 27L DP300 91L DP410 216L DP610

### Wide variety of compact and large scale ovens.

Designed with high accuracy controller system with advanced functionality and safety, vacuum storage ability and various options for system upgrade. Ideal for curing, annealing, baking, defoaming, hardening and deaeration treatments.



### Operation and functions

- Shorter drying time and heat-up process with the new Z controller system resulting to faster heat up process (by 37% compared to previous models) and improved stability when operating at low temperatures.
- User-friendly control panel and display.
- Standard equipped with various operation modes (fixed temp., auto-start, auto-stop, quick auto stop, program) and other support functions such as timer, calibration offset, power consumption / CO<sub>2</sub> emission monitor and power recovery mode.
- Option for input/output function (optional) 4-20mA analog output, external communication terminal (RS485), alarm output, operation signal, time-up signal, output port.

### Safety Features

- Self diagnosis functions, independent overheating prevention & electric leakage breaker.

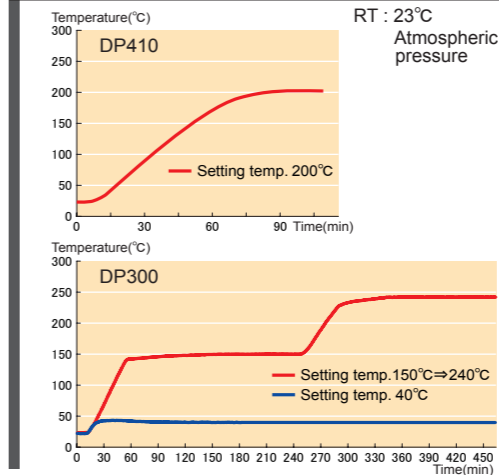
### Specifications

Model	DP200	DP300	DP410	DP610
System	Vacuum drying by decompressed chamber direct heating			
Operating temperature range	Room temp. +40~240°C		Room temp. +40~200°C	
Operating pressure range	101~0.1 kPa (760~1 Torr) at absolute pressure			
Temp. Fluctuation	± 1.0°C (at 240°C)		± 1.5°C (at 200°C)	
Max. temp. reaching time	Approx. 60 min.	Approx. 120 min.	Approx. 80 min.	Approx. 120 min.
Interior material	Stainless steel			
Exterior material	Cold rolled steel plate with baked-on melamine resin finish			
Door	Single swing door			
Heat insulating material	Rock wool			
Heating method	Decompressed chamber direct heating			
Heater	Mica heater, 0.68 kW	Mica heater, 1.05 kW	Mica heater, 2.25 kW	Mica heater, 3.15 kW
Vacuum gauge	Bourdon tube type, 0 to 0.1 MPa (Gauge pressure)			
Observation window	Tempered glass and polycarbonate resin plate			
Pump connection port / Purge port	Exterior ∅18(mm) / Rc 1/4		NW25 flange / Rc 1/4	
Temp. control method	PID control by microprocessor			
Temp. setting method	Digital setting with UP/DOWN key			
Temp display method	Digital display by green LED			
Timer	0 min. to 99 Hrs. 59 min. and 100 Hrs. to 999 Hrs.			
Min. division	1 min. or 1 Hrs.			
Operation function	Fixed temperature operation, Auto-start operation, Auto-stop operation, quick auto stop, program			
Additional functions	Calendar timer (max. 24 Hrs.), Integration time (max 65535 Hrs.), Time display, calibration offset, monitor display of total power consumption, total CO <sub>2</sub> emission and heater operating output, power recovery mode, storage and access of operator setting data			
Heater circuit control	Triac zero-cross control			
Temp. sensor	K-thermocouple (Double sensor)			
Safety device	Self diagnosis functions (Sensor, Heater, Triac, Automatic overheating prevention), Independent overheating prevention, Key lock function, Electric leakage breaker			
Leakage breaker	15A		20A	
Independent cut-out circuit	Set temperature range: 0~270°C		Set temperature range: 0~230°C	
Internal dimensions (W×D×Hmm)	200×250×200	300×300×300	450×450×450	0600×600×6000
External dimensions(W×D×Hmm)	400×410×682	510×460×782	670×669×1500	820×819×1650
Internal capacity	10L	27L	91L	216L
Shelf rest step number	3 steps		4 steps	
Shelf rest pitch	63mm	71mm	105mm	140mm
Exhaust port / Purge port	18mm O.D. (the right side) 1 pc. each		NW25 flange / Rc 1/4 (18mm O.D.)	
Power source (50/60Hz)	AC115V/AC220V Single phase with step-down transformer	AC115V/AC220V Single phase with step-down transformer	AC220V Single phase	
Weight	Approx. 45 kg	Approx. 72 kg	Approx. 210 kg	Approx. 310 kg
Accessories	Shelf plate Punched stainless steel, 2 pcs			

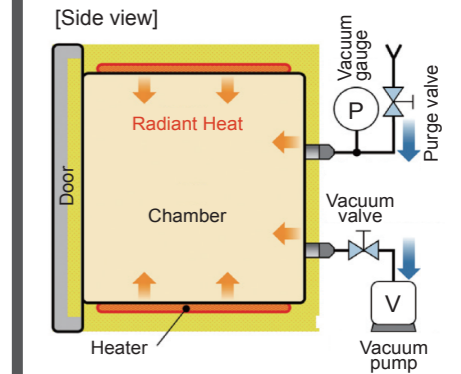
### Control Panel



### Temperature Characteristics



### Method

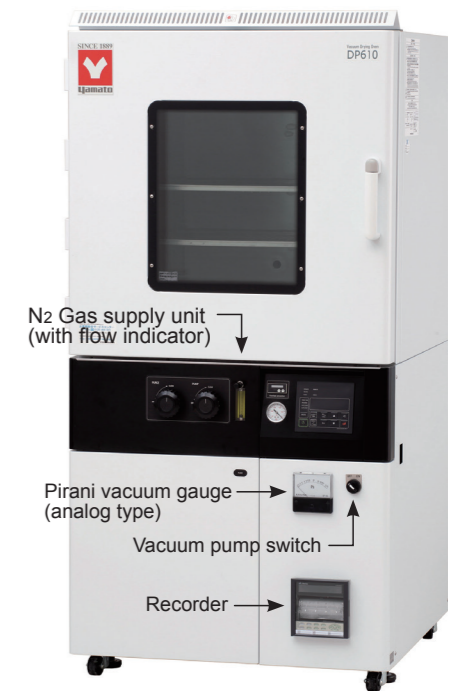
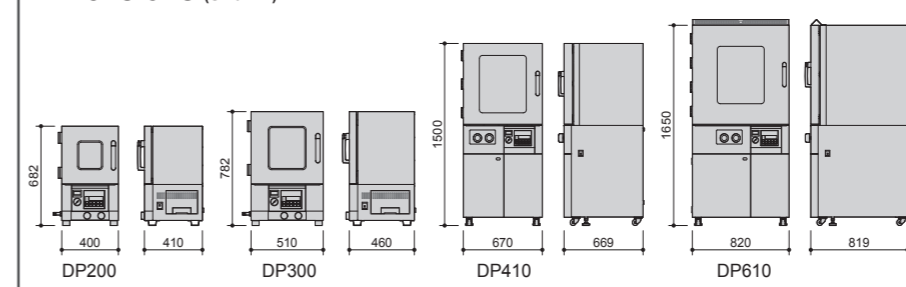


### Optional Items

Description	Model No.	Product code
Stainless punching metal shelf	for DP200	- 212134
Stainless punching metal shelf	for DP300	- 212162
Stand	for DP200/DP300	ONS10 212079
External communication adapter set	for DP200/DP300	OIN90 211880
*Sheath sensor(500mm)	for DP200/DP300	ODP36 281601
*Sheath sensor(1500mm)	for DP200/DP300	ODP38 281602
*External communication terminal (RS485)	for DP200/DP300	ODP24 281603
*Analog output terminal (4-20 mA)	for DP200/DP300	ODP26 281604
*External alarm output terminal	for DP200/DP300	ODP28 281605
*Time-up output terminal	for DP200/DP300	ODP32 281606
*Digital vacuum indicator	for DP200/DP300	ODP34 281607
Stainless punching metal shelf	for DP410	- 212192
Stainless punching metal shelf	for DP610	- 212193
External communication adapter set	for DP410/DP610	OIN90 211880
*Sheath sensor (500mm)	for DP410/DP610	ODP36 281601
*Sheath sensor (1500mm)	for DP410/DP610	ODP38 281602
*External communication terminal (RS485)	for DP410/DP610	ODP42 281608
*Analog output terminal (4-20 mA)	for DP410/DP610	ODP44 281609
*External alarm output terminal	for DP410/DP610	ODP46 281610
*Time-up output terminal	for DP410/DP610	ODP48 281611
*Operating signal output terminal	for DP410/DP610	ODP52 281612
*Event output terminal	for DP410/DP610	ODP54 281613
*Vacuum pump switch (AC100V)	for DP410/DP610	ODP84 281625
*Vacuum pump switch (AC200V)	for DP410/DP610	ODP56 281614
*Pirani vacuum gauge with 0-10mV voltage output (analog type)	for DP410/DP610	ODP58 281615
*Pirani vacuum gauge with 0-10mV voltage output	for DP410/DP610	ODP62 281616
*Digital recorder	for DP410/DP610	ODP64 281617
*Digital vacuum indicator	for DP410/DP610	ODP82 281618
*N <sub>2</sub> gas supply unit (with flow Indicator)	for DP410	ODP66 281619
*Slide type vacuum pump Stand A	for DP410	ODP72 281620
*Slide type vacuum pump Stand B	for DP410	ODP76 281621
*N <sub>2</sub> Gas supply unit (with flow Indicator)	for DP610	ODP68 281622
*Slide type vacuum pump Stand C	for DP610	ODP74 281623
*Slide type vacuum pump Stand D	for DP610	ODP78 281624

\* Please specify when ordering main unit.

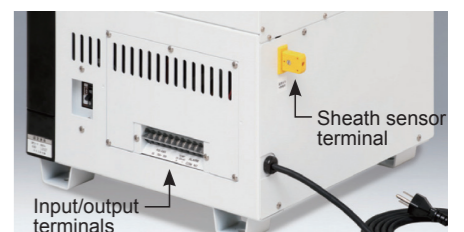
### Dimensions (Unit:mm)



DP610



DP610



DP300

# Vacuum Drying Ovens

Large capacity

## DP810/1030

Operating temp. range 40°C~200°C

Operating pressure range 100~0.1

Internal capacity 512L DP810 1,000L DP1030



- Decompression drying of large samples available
- Space saving, vacuum pump can be installed inside the oven.
- Interactive key input control panel, temperature display by LED.
- Highly accurate operation functions.

### Control Panel



### Specifications

Model	DP810	DP1030
System	Vacuum drying by decompressed chamber direct heating	
Operating temperature range	40~200°C	
Operating pressure range	100~0.1 kPa (760~1 Torr)	
Temp. adjustment accuracy	± 1.0°C (at 200°C)	
Interior material	Stainless steel	
Exterior material	Cold rolled steel plate with baked-on melamine resin finish	
Door	Single swing door	
Heat insulating material	Rock wool	
Heating method	Decompressed chamber direct heating	
Heater	Mica heater, 6.5kW	Mica heater, 14.4kW
Operation functions	Fixed temp., Auto-start, Auto-stop, Quick auto stop, Program (max.99 steps, 99 patterns, repeat)	
Heater circuit control	Triac zero-cross control	
Temp. sensor	K-thermocouple	
Exhaust port	NW40	
Inlet/Purge port	RC 1/4	RC 3/8
Temp. control method	PID control by microprocessor	
Temp. setting method	Digital setting with UP/DOWN key	
Temp display method	Digital display	
Other display	Temperature indicating the operation state displayed by LED	
Additional functions	Calendar timer (max. 24 Hrs.), Integration time (max. 65535 hrs.), Clock, Calibration off-set, Display the amount of power consumption / CO <sub>2</sub> discharge / Heater operation amount, Power failure recovery mode, User setting information save and recall	
Safety device	Self diagnosis functions(Sensor, Heater, Triac, Automatic overheating prevention), Independent overheating prevention, Key lock function, Electric leakage breaker	
Internal dimensions (W×D×Hmm)	800×800×800	1,000×1,000×1,000
External dimensions(W×D×Hmm)	1,020×1,019×1,850	1,300×1,280×2110
Internal capacity	512L	1,000L
Power source (50/60Hz)	AC220V Single phase	AC220V / AC380V Three phase
Weight	Approx. 600kg	Approx. 1000 kg
Accessories	Shelf plate	Punched stainless steel, 2 pcs

# Vacuum Drying Oven

Automatic sequence

## DP610P

Operating temp. range 40°C~200°C

Operating pressure range 100~0.1 kPa

Internal capacity 216L



**Vacuum pump linkage automatic sequence releases manual operation of a vacuum pump and a leak valve. Eliminates worries on incorrect operation, reverse flow of vacuum pump oil when power off.**

- Automatic sequence operation of vacuum pump linkage possible.
- High quality controller.
- Space saving, vacuum pump can be installed inside the oven.
- Prevents vacuum pump oil backflow when power is off.
- No exhaust losses because of 1 inch solenoid vacuum valve.
- Equipped with auto/manual selector switch.

### Control Panel



### Specifications

Model	DP610P
System	Vacuum drying by decompressed chamber direct heating
Operating temperature range	40~200°C
Operating pressure range	101~0.1 kPa (760~1 Torr) at absolute pressure
Temp. adjustment accuracy	± 1.5°C (at 200°C)
Max. temp. reaching time	Approx. 100 min.
Interior/Exterior material	Stainless steel/Cold rolled steel plate with baked-on melamine resin finish
Heating method	Decompressed chamber direct heating
Heater	Mica heater, 3.15 kW
Vacuum gauge	Bourdon tube type, 0~0.1 MPa (Gauge pressure)
Observation window	Tempered glass and polycarbonate resin plate
Temp. control method	PID control by microprocessor
Operation functions	Fixed temperature operation, auto-start operation, auto-stop operation, program operation ( 99 steps, 99 patterns repeat operation)
Additional functions	Calendar timer (max. 24 Hrs.), Integration time (max 65535 Hrs.), Time display, calibration offset, power discharge, CO <sub>2</sub> discharge, heater consumption display, power failure stagnation mode, user configuration information
Heater circuit control	Triac zero-cross control
Temp. sensor	K-thermocouple (double sensor)
Safety device	Self diagnosis functions(Sensor, Heater, Triac, automatic overheating prevention), Independent overheating prevention, Key lock function, Electric leakage breaker
Internal dimensions (W×D×Hmm)	600×600×600
External dimensions(W×D×Hmm)	820×819×1,650
Internal capacity	216L
Shelf rest step number/pitch	4 steps/140mm
Exhaust port / Purge port	NW25 flange / Rc 1/4
Power source (50/60Hz)	AC220V Single phase
Weight	Approx. 310kg
Accessories	Shelf plate
	Punched stainless steel, 2 pcs