

# Natural Convection Oven

Economical, Constant Temperature Ovens



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

Operating temp. range	Room temp. +5~300°C (DX302C/402C)	Room temp. +5~280°C (DX602C)	Temp. distribution accuracy	±10°C	Operation	Economical, affordable
-----------------------	-----------------------------------	------------------------------	-----------------------------	-------	-----------	------------------------

Highly practical standard ovens with maximum temperature up to 300°C



(Stand optional)

Standard natural convection constant temperature drying ovens, with extensive features and simple operation.

- Performance and functions**
  - Economical and cost saving
  - Easy to use and maintain
  - Excellent temperature accuracy
  - Digital PID controller
  - Easy operation functions: Fixed setting, Quick Auto Stop, Auto Start, Auto Stop
  - Increased safety and self-diagnostic function
  - Calibration off-set function
- Safety features**
  - Temp sensor error, Temp input circuit error, Auto overheat prevention, Measured temp error, Circuit breaker with over current protection

### Specifications

Model	DX302C	DX312C	DX402C	DX412C	DX602C	DX612C
Circulation method	Natural gravity convection					
Operating temp. range	Room temp. +5°C~300°C				Room temp. +5°C~280°C	
Temp. control accuracy	±1°C (at 300°C)					
Temp. distribution accuracy	±10°C (at 300°C)				±10°C (at 280°C)	
Max. temp. reaching time	~45 min (Room temp.~300°C)		~60 min (Room temp.~300°C)		~80 min (Room temp.~280°C)	
Interior material	Stainless steel					
Exterior material	Electro-galvanized steel sheet with melamine resin baking finish					
Heat insulating material	Glass wool					
Heater	Iron-chrome wire heater, 0.9 kW		Iron-chrome wire heater, 1.36 kW			
Exhaust port	33 mm I.D. x 2 pcs. (on top)					
Temp. controller	PID control by microprocessor					
Temp. setting method	Digital setting by UP/DOWN key					
Temp. display method	Measurement temp. : Digital display by green LED Setting temp. : Digital display by red LED					
Timer	1 min. to 99 Hrs. 59 min. and 100 Hrs. to 999 Hrs. 50 min.					
Operation function	Fixed temperature operation, Quick auto stop, Auto stop, Auto start					
Additional function	Calibration off-set, Power failure compensation function, Key lock function					
Heater circuit control	SSR control					
Sensor	K-thermocouple					
Safety device	Self diagnosis functions(Temp. Sensor abnormal, Abnormal memory, Input temp. abnormal, Measured temp. abnormal, Automatic overheat prevention), Key lock function, Hydraulic independent overheat prevention device, Electric leakage breaker with over current protection.					
Internal dimensions (W×D×H)	300*310*300mm		450*410*400mm		600*510*500mm	
External dimensions(W×D×H)	400*440*630mm		550*540*730mm		700*640*830mm	
Internal capacity	28L		74L		153L	
Shelf plate with standard load	15kg/piece					
Shelf rest step number / pitch	6 steps / 35mm		9steps / 35mm		12steps / 35mm	
Power source 50/60Hz	AC115V 9.5A	AC220V 4.3A	AC115V 14A	AC220V 6.4A	AC115V 14A	AC220V 6.4A
Weight	~23kg		~38kg		~56kg	
Accessories	Stainless steel, Punching metal shelf plate 2pcs. Shelf bracket 4pcs.					

## Interior



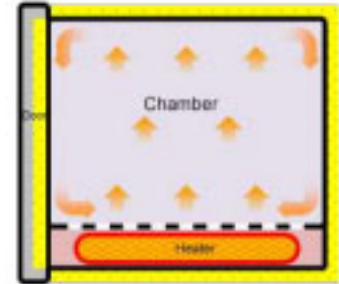
DX402C

## Control Panel



## Method

[Side view]

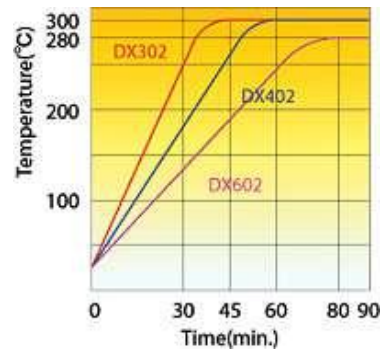


## Optional items

Description	Product code
Stand	
ONS30 for DX302C/312C	212801
ONS60 for DX402C/412C/602C/612C	212802
Stacking support	
ODK80 For DX302C/312C	212803
ODK82 For DX402C/412C	212804
ODK84 For DX602C/612C	212805
Shelf	
For DX302C/312C	212068
For DX402C/412C	212095
For DX602C/612C	212266
*Cable port	
25mm Ø	281009
50mm Ø	281010
Seismic mat	296902

\* Please specify when ordering main unit.

## Temperature Rising Curve



## Optional Items



Stand

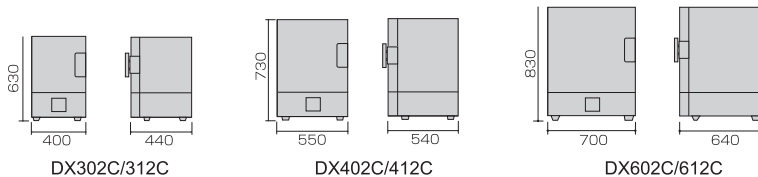


Shelf with 2 brackets



Seismic mat

## Dimensional Drawing (mm)



## ⚠ Attention

- Never use in flammable or explosive gas atmosphere.
- Never use explosive or flammable material.
- Caution: High temperature components.

# Programmable Natural Convection Oven

MADE



Constant Temperature Ovens

DVS402C/412C/602C/612C

Operating temp. range

Room temp. +5~260°C

Temp. distribution accuracy

±5°C (at 260°C)

Internal capacity

99L (402C/412C)  
162L (602C/612C)

## Programmable standard ovens with easy to perform program settings



99L  
DVS402C

162L  
DVS602C

(Stand optional)

### Operation and functions

- Excellent temperature accuracy
- Easy to use and maintain
- Equipped with a 6 pattern PID program controller with easy program settings (30 steps x 1, 15 steps x 2, 10 steps x 3)
- Simultaneous display of set constant and measured temperature
- Quick Auto stop, Auto Start / Stop operation
- Increased safety and self-diagnostic function
- With calibration offset function

### Safety features

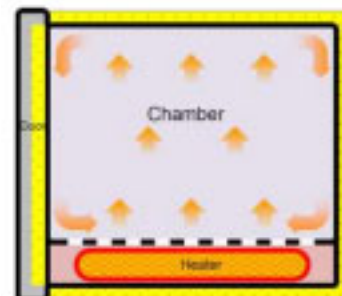
- Self diagnosis functions (Temp. sensor abnormal, Heater disconnection, Internal communication error, temperature input circuit abnormality, Automatic overheat prevention function, SSR-short), Overheat prevention, Electric leakage breaker with over current protection

### Specifications

Model	DVS402C	DVS412C	DVS602C	DVS612C
Circulation method	Natural convection			
Operating temp. range	Room temp.+5 to 260°C			
Temp. control accuracy	±1.0°C (at 260°C)			
Temp. distribution accuracy	±5.0°C (at 260°C)			
Max. temp. reaching time	~90 min. (Room temp. +5°C~260°C)			
Interior material	Stainless steel			
Exterior material	Cold rolled steel plate with melamine resin baking finish			
Heat insulating material	Glass wool			
Heater	Stainless pipe heater 1.2kW		1.36kW	
Observation window	250×280 mm Chemically strengthened glass x 3			
Cable hole	30 mm I.D.×1 pcs.(right side)			
Exhaust port	30 mm I.D.×2 pcs.(on top)			
Temp. controller	3 patterns program controller, PID control by microprocessor			
Temp. setting method	Operation menu key and Digital setting by ▲/▼ key			
Temp display method	Measurement temp. : Digital display by green LED Setting temp. : Digital display by red LED			
Timer	1 min. to 99 Hrs. 59 min. and 100 Hrs. to 999 Hrs. 50 min.			
Operation function	Fixed temperature, Program, Auto start, Auto stop, Quick Auto-stop,			
Program mode	Program operation: 6 pattern, 30 steps (30 steps×1, 15 steps×2, 10 steps×3)			
Additional functions	Calibration off-set function, Key lock, Uninterruptible power for memory, Pattern repeat function			
Heater circuit control	SSR control			
Sensor	K-thermocouple			
Safety device	Self diagnosis functions (temp. sensor abnormal, Heater disconnection, SSR- short, Memory abnormal, Automatic overheating prevention), Overheat prevention, Electric leakage breaker with over current protection			
Internal dimensions (W×D×H)	450×490×450 mm		600×540×500 mm	
External dimensions (W×D×H)	560×601×820 mm		710×651×870 mm	
Internal capacity	99L		162L	
Shelf plate load	~15kg / pcs.			
Shelf rest step number / pitch	9 steps / 30mm		13 steps /30mm	
Power source 50/60Hz	AC115V 12A with plug	AC220V 6.5A no plug, round terminal	AC115V 13.5A with plug	AC220V 7.5A no plug, round terminal
Weight	~48kg		~63kg	
Included accessories	Stainless steel, 2 pcs. shelf plate / 4 pcs. brackets			

### Method

[Side view]

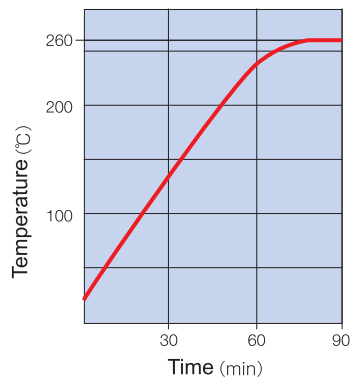


## Interior (DVS402C)



- Enhanced sealing function with heat resistant silicon rubber packing, ensuring stable performance.
- Stainless steel interior material, high corrosion resistance for easy cleaning.

## Temp. Rising Curve



## Control Panel



## Cable Port (Standard)



## Exhaust Port (Standard)



## Shelf Plate / Shelf Bracket

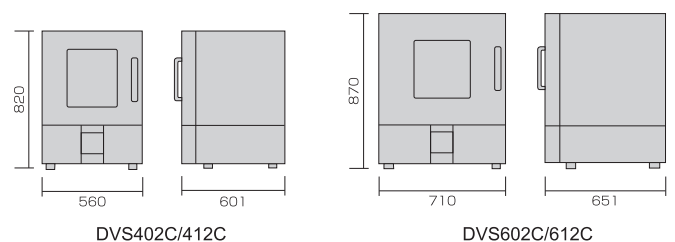


## Optional Items

Description	Product code
Stand ON61	211856
Stacking support	
OD40 for DVS402C/412C	212822
OD60 for DVS602C/612C	212823
Shelf (with support 2 pcs)	
For DVS402C/412C	212246
For DVS602C/612C	212266
*Cable Port	
25mm Ø	281131
50mm Ø	281132
*Temperature output terminal (4-20 mA)	281133
*External alarm terminal/ time-up output terminal (choose either)	281134
Seismic mat	296902

\* Please specify when ordering main unit.

## Dimensions (Unit:mm)



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

● Caution: High temperature components.

# High Temperature Natural Convection Oven



## DR201-115V / DR201-220V

Operating temp. range 300~700°C

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

Internal capacity 13.75L

### Maximum operation temperature up to 700°C

#### Operation and functions

- Programmable natural convection oven with high accuracy control at high temperature range
- Can be used as an electric furnace for ashing and sintering, but also as an incubator and drying oven
- Temperature, measured temperature and overheat prevention temperature can be digitally set by operation menu and ▲/▼ keys
- Easy programmable operation, fixed temperature, quick auto stop, auto stop, program auto start, auto start
- Equipped with sub-functions such as overheating prevention temperature prevention temperature setting, key lock function, program repeat function, calibration offset

#### Safety features

- Self-diagnostic functions (automatic overheat prevention, temperature sensor failure, heater disconnection, SSR short circuit, main relay failure, memory error, internal communication error, abnormal temperature reading), Overcurrent ELB, Overheat prevention device

#### Specifications

Model	DR201-115V	DR201-220V
System	Natural convection	
Temp. control range	300~700°C	
Temp. control accuracy	±5°C (at 700°C)	
Temp. fluctuation	10°C (at 700°C)	
Temp. distribution accuracy	±25°C (at 700°C)	
Temp. gradient	30°C (at 700°C)	
Temp. rise time	~70min. (Room temp. +5°C~700°C)	
Temp. fall time	~150min. (700°C to 300°C)	
Interior material	Stainless steel sheet metal	
Exterior material	Chromium-free electrogalvanized steel sheet, baked-on finish	
Heat insulating material	Ceramic fiber rock wool	
Heater type / capacity	Iron-chrome wire heater / 1.3kW	
Temp. controller	PID control by microcomputer	
Temp. setting method	Digital setting with menu keys and ▲/▼ keys	
Temp. display	Temp. reading display: Green 4 digit LED digital Temp. setting display: Red 4 digit LED digital	
Timer function	0 to 99 hrs 59 mins. and 100 hrs. to 999 hrs 50min.	
Timer resolution	1 minute increments under 99 hours and 59 minutes, 10 minutes after 100 hours.	
Wait function	Timer wait function (ON/OFF setting)	
Operation modes	Fixed temperature, program, program auto start, auto start, quick auto stop, auto stop	
Program modes	6 patterns (PrG1: 30 steps, PrG2-3: 15 steps, PrG4-6: 10 steps) step weight function, repeat function, step hold function, step skip function	
Additional functions	Calibration offset, keypad lock, auto resume mode select	
Sensor	K thermocouple (W sensor)	
Safety devices	Self-diagnostic functions (automatic overheat prevention, temp. sensor failure, heater disconnection, SSR short circuit, main relay failure, memory error, internal comm. error, abnormal temp. reading), overcurrent ELB, overheat prevention device	
Internal dimension (WxDxH)	250 x 250 x 220 mm	
External dimension (WxDxH)	520 x 443 x 612 mm (protrusions excluded)	
Internal capacity	13.75L	
Shelf load capacity	15 kg / pc. Total load capacity 30 kg	
Shelf rest step number	3 steps	
Shelf rest pitch	33 mm	
Power source (50/60Hz)	AC115V 11.5A (with plug)	AC220V 6.0A (with plug)
Weight	~36 kg	
Shelf plate	Perforated stainless steel plate	
Included accessory	2 pcs. shelf plate	



13.75L

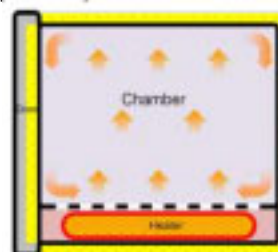
#### Optional items

No.	Description	No.	Product code
1	Stand ONS60		212802
2	Shelf plate 1pc.		212808
3	Seismic mat (set of 4 pcs.)		296902
4	External alarm output terminal*		281283
5	Time-up output terminal*		281284
6	Temperature output terminal (4-20mA)		281285

Some options are required to be installed at the factory. Contact YSA for options 4-6.  
\* External alarm terminal and time-up output terminal cannot be installed at the same time

#### Method

[Side view]



#### Accessories

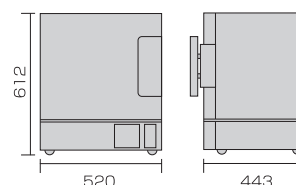


Shelf plate



ONS stand

#### Dimensions (mm)



#### ⚠ Attention

- Never use in flammable or explosive gas atmosphere
- Never use explosive or flammable material
- Caution: High temperature components