

# Forced Convection Oven

**Energy Saving** Programmable Forced Convection Ovens



## DNE401/411/601/611/811/911

Operating temp. range RT +20°C~210°C (DNE401/411/601/611)  
RT +15°C~210°C (DNE811/911)

Temp. distribution accuracy ±2.0°C (at 210°C)

Operation Energy saving  
Environment friendly

**High performance environment friendly eco-oven that reduces power consumption significantly**

### Operation and functions

- High precision controller allows high performance temperature control and display of CO<sub>2</sub> and power discharge
- Heat tightness and insulation design of the chamber achieves an energy saving rate of about 40% at constant temperature compared to previous models
- Maximum temperature reaching time reduced by 15 minutes (no-load) compared to previous models.
- Program operation with a maximum of 99 steps, 99 patterns repeatable
- Standard equipped with various support functions such as calibration offset, power failure recovery mode, save and access of user setting information, as well as other operation modes
- Data acquisition from internal test device possible because of cable holes
- Easy system upgrade with various option settings

### Safety features

- Standard equipped with various self-diagnostic functions, independent overheat prevention device, overcurrent circuit breaker, and key lock function

### Specifications



Model	DNE401	DNE411	DNE601	DNE611	DNE811	DNE911	
Circulation method	Forced air circulation						
External temp. range	5~35°C						
Temperature control range	Room temperature +20~210°C				Room temperature +15~210°C		
Temp. control accuracy *1	±0.5°C (at 210°C)						
Temp. fluctuation *1	±0.6°C (at 210°C)						
Temp. distribution accuracy *1	±2.0°C (at 210°C)						
Temp. gradient*1	6°C (at 210°C)		8°C (at 210°C)		8°C (at 210°C)	10°C (at 210°C)	
Temp. rise time *1	~60 min.		~70 min.		~45 min.	~60 min.	
Chamber / Exterior / Insulation	Stainless steel / Chrome-free electro-galvanized steel plate, chemical-proof baked-on finish / Glass wool						
Door	Single swing (left side)					Double doors (from center)	
Insulating material	Glass wool						
Heater (Stainless steel pipe)	1.1kW		1.2kW		1.2kW x 2	1.5kW x 2	
Fan Type	Fan	Scirocco fan, capacitor motor					
	Motor	10W				30W	30W x 2
Cable hole (lower right side)	33mm I.D. 1pc.						
Exhaust port	33mm I.D. 2pcs (top)				33mm I.D. 2pcs (rear)		
Caster wheels	--				Free swivel caster wheels (w/o stopper)		
Adjuster	--				Level adjusters (2 at the front)		
Controller	Model V type						
Temp. control / setting system	PID Z control / Digital setting with ▲/▼ keys						
Temp. display	Top screen (Chamber): Green 4 digit LED digital display (1°C resolution) / Bottom screen: Orange 5 digit LED digital display (1°C resolution)						
Other indications	LED indicates temperature patterns for heating/stable/cooling						
Timer	1 min. and 99 Hrs. 59 mins: duration operation, 24 hour setting: time operation						
Operation functions	Fixed temperature, Program operation (max.99 steps, up to 99 patterns repeat operation function), Duration/time select timer operation function (fixed temperature operation, auto-start, auto-stop, quick auto stop, program operation auto start)						
Additional functions	Power on and Integration time function (up to 65,535 hours), Calibration offset, Time display, Display of power consumption, CO <sub>2</sub> discharge and heater operation, Power failure return mode, User configuration information						
Temperature sensor	K type Thermocouple double sensor (for temperature control and independent overheat prevention device)						
Heater control	Triac with Zero-cross Control						
Control board	Self diagnostic functions (temp. sensor failure detection, TRIAC short circuit, heater line disconnection, fan failure detection, main relay abnormal, automatic overheating prevention, key lock function)						
Earth leakage breaker	Leak Current/Short Circuit/Overcurrent Protection, Rated Current Sensitivity 30mA						
Independent overheat prevention	Set temperature range: 0~250°C						
Internal dimensions (W×D×H)*2	450×450×450 mm		600×500×500 mm		600×500×1000 mm	1090×500×1000 mm	
External dimensions (W×D×H)*2	580×645×860 mm		730×695×910 mm		730×695×1660 mm	1220 ×695×1660 mm	
Capacity	90L		150L		300L	540L	
Weight	~63kg		~77kg		~92kg	~185kg	
Included accessories: shelf plate/bracket	2 pcs. / 4 pcs.				4 pcs. / 8 pcs.	8 pcs. / 16 pcs.	
Shelf rest step number / Shelf rest pitch	11 steps / 30mm		13 steps / 30mm		29 steps / 30mm	29 steps / 30mm x 2	
Withstand load of shelf	~15kg / shelf						
Power supply V±10% 50/60Hz single phase	AC115V 10A with plug	AC220V 5.5A no plug, round terminal	AC115V 11A with plug	AC220V 6A no plug, round terminal	AC220V 11.5A no plug, round terminal	AC220V 14A no plug, round terminal	

\*1 Temperature Accuracy / Rise time Standard: Testing Machinery Association of Japan. Temperature Fluctuation/Gradient Standard: Japanese Industrial Standard  
Performance data above based on 115V or 220V AC supplied power, 23°C±5°C (room temperature), 65%RH ±20% humidity, maximum air speed (FAN setting 10), damper closed, and no process load.

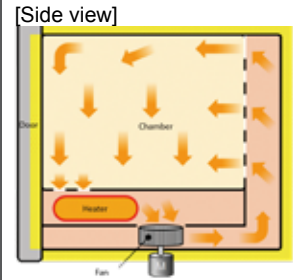
\*2 Protrusions excluded



### Control Panel



### Method



### Interior



DNE401



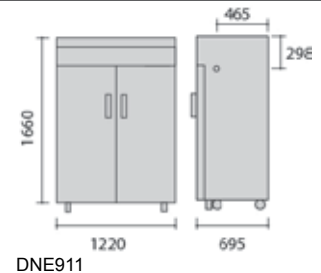
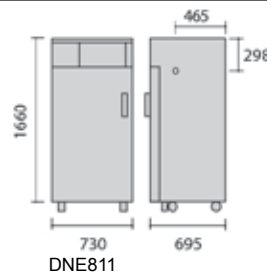
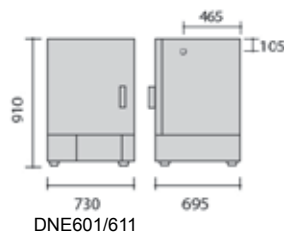
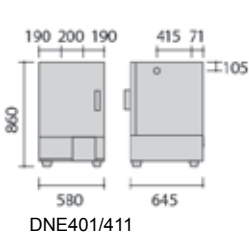
DNE911

### Optional Items

Description	Product code	Model	Applicable units
Stand	211856	ON61	DNE401/411/601/611
	212348	OT42	DNE401/411
	212349	OT62	DNE601/611
Stacking support	212806	ODN26	DNE401/411
	212807	ODN28	DNE601/611
Shelf and bracket set	212246	ODN20	DNE401/411
	212266	ODN22	DNE601/611/811
	212490	--	DNE911
	212946	ODT48	All models
Seath sensor (K type Thermocouple)	212947	ODT52	All models
Silicon plug (with one hole)	281454	ODM36	All models
*Cable port, 25mm diameter	281455	ODM38	All models
50mm diameter	281456	ODM40	DNE401/411
*Observation window for DNE401/411	281457	ODM42	DNE601/611
*Observation window for DNE601/611	211880	OIN90	All models
*External communication adapter set	281446	ODM20	DNE401/411/601/611/811
*External alarm output terminal	281447	ODM22	DNE911
*Time-up output terminal / Operation signal output terminal	281448	ODM24	DNE401/411/601/611/811
	281449	ODM26	DNE911
*Event output terminal / Time-up output terminal	281450	ODM28	DNE401/411/601/611/811
	281451	ODM30	DNE911
*Operation signal output terminal	281452	ODM32	DNE401/411/601/611/811
	281453	ODM34	DNE911

\* 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