

Industrial Constant Temperature Ovens Rapid heat & cool, Forced Convection

DKG610/610V/650/650V/810/810V/850/850V

Operating temp. range	Temp. distribution accuracy	Internal capacity
Room temp. + 30 to 260deg.C	±2.0deg.C (at 200 deg.C)	150L (610/610V/650/650V) 300L (810/810V/850/850V))

Reduced heating time to 1/2.5, cooling time to 1/4 (compared with conventional company products), horizontal air flow appropriate for loaded operation, the standard oven for production lines supporting multi power supplies. The product lineup includes a silicon free type.



- Standard oven with simple operation whose temperature increase and decrease time has been improved 50% or more compared with conventional products to reduce product takt time.
- Temperature increase time has been reduced up to 1/2.5 (at no load, compared with conventional company products), temperature decrease time has also been reduced to 1/4 (at no load, compared with conventional company products). Extensive increase in work efficiency is expected.
- Employment of a total exhaust system in which air supply and discharge are linked by operation of the manual damper at the front realizes extensive

reduction in temperature decrease time.

- The horizontal air flow system ideal for processing samples in a magazine rack or a lot of samples realizes high precision temperature performance even at loaded condition.
- Fluoro rubber is employed for shoulder packing to realize silicon free. (DKG610V/650V/810V/850V)
- Product lineup includes 610/610V/810/810V for 200 to 220V power supply and 650/650V/850/850V for 230 to 240V to support multiple power supplies.

■ Specifications

Product code		212884	212885	212886	212887
Model		DKG610	DKG610V	DKG650V	DKG650
System		Forced convection			
Performance	Operating temp. range	Room temperature + 30 to 260deg.C			
	Temp. adjustment accuracy	±0.5deg.C			
	Temp. distribution accuracy	±2 (at 200deg.C), ±2.5 (at 260deg.C)			
	Time to attain max. temp.	Within 45 min. from 25deg.C-->260deg.C			
	Temp. decrease time	About 30 min. from 260deg.C-->50deg.C			
Configuration	Air supply/exhaust damper	Front operation/manual damper Air supply pipe/exhaust pipe at the rear NSSC180 With exhaust duct			
	Interior/exterior	Stainless steel plate/chrome free electro galvanized steel plate Chemical proof baking finish			
	Heater and heat insulator	SUS pipe heater & glass wool			
	Heater capacity	200 to 220V 2.6 to 3.15kW 230 to 240V	2.6 to 2.83kW 200 to 240V		
	Blower fan	Sirocco fan x 1			
	Fan motor	Capacitor 30W x 1			
	Cable port	I.D.: 30 mm One at the right side of the main body			
	Door packing	Silicon rubber	Fluororubber	Silicon rubber	Fluororubber
	Air supply port	Bottom of heater room (open/close with a manual damper)			
	Exhaust port	Upper part of rear of the main body: 80φ(open/close with a manual damper)			
	Damper control	Linked air supply/exhaust with manual knob on the front of the main body			
	Heater control	SSR control			
	Sensor	K-thermocouple (both for inside the chamber and heater room)			
Safety unit		Self diagnostic function (temperature sensor error, heater disconnection, SSR short-circuit, automatic overheat prevention function), key lock, program lock, overheat preventive device, over current electric leakage breaker, door switch, temperature fuse, external alarm terminal			
Standards	Internal chamber size	W600 x D500 x H500 mm			
	External size	W770 x D696 (846) x H985 mm Size in the parenthesis includes the exhaust duct.			
	Internal volume	150L			
	Withstand load of shelf	15 kg/unit			
	No.of internal shelf stages	7 stages			
	Shelf support pitch	60 mm pitch			
	PS (50/60) Hz rated current	200 to 220V 13 to 15A (20A)	230 to 240V 12 to 12.5A (15A)		
	Weight	100kg			
Accessories	Shelf	Stainless steel punched metal (The bottom one shelf is fixed with screws)			
		2			
	Shelf support	4			

Product code		212888	212889	212890	212891
Model		DKG810	DKG810V	DKG850	DKG850V
System		Forced convection			
Performance	Operating temp. range	Room temperature + 30 to 260deg.C			
	Temp. adjustment accuracy	±0.5deg.C			
	Temp. distribution accuracy	±2 (at 200deg.C), ±2.5 (at 260deg.C)			
	Time to attain max. temp.	Within 50 min. from 25deg.C-->260deg.C			
	Temp. decrease time	About 40 min. from 260deg.C-->50deg.C			
Configuration	Air supply/exhaust damper	Front operation/manual damper Air supply pipe/exhaust pipe at the rear NSSC180 With exhaust duct			
	Interior/exterior	Stainless steel plate/chrome free electro galvanized steel plate Chemical proof baking finish			
	Heater and heat insulator	SUS pipe heater & glass wool			
	Heater capacity	220V 3.6 to 4.36kW		230 to 240V 3.6 to 3.92kW	
	Blower fan	Sirocco fans x 2			
	Fan motor	Capacitor 30W x 2			
	Cable port	I.D.: 30 mm One at the right side of the main body			
	Door packing	Silicon rubber	Fluororubber	Silicon rubber	Fluororubber
	Air supply port	Bottom of heater room (open/close with a manual damper)			
	Exhaust port	Upper part of rear of the main body: 80φ(open/close with a manual damper)			
	Damper control	Linked air supply/exhaust with manual knob on the front of the main body			
	Heater control	SSR control			
	Sensor	K-thermocouple (both for inside the chamber and heater room)			
Safety unit		Self diagnostic function (temperature sensor error, heater disconnection, SSR short-circuit, automatic overheat prevention function), key lock, program lock, overheat preventive device, over current electric leakage breaker, door switch, temperature fuse, external alarm terminal			
Standards	Internal chamber size	W600 x D500 x H1000 mm			
	External size	W770 x D696 (846) x H1674 mm Size in the parenthesis includes the exhaust duct.			
	Internal volume	300L			
	Withstand load of shelf	15 kg/unit			
	No.of internal shelf stages	15 stages			
	Shelf support pitch	60 mm pitch			
	PS (50/60) Hz rated current	200 to 220V 18.5 to 20.5A (30A)		230 to 240V 16.5 to 17A (20A)	
	Weight	145kg			
Accessories	Shelf	Stainless steel punched metal (The bottom one shelf is fixed with screws)			
		4			
	Shelf support	8			

■ Control panel



▼ Main features

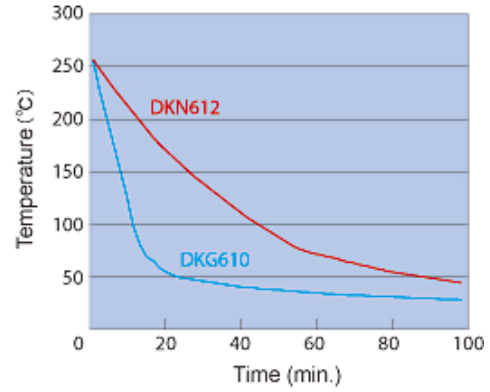
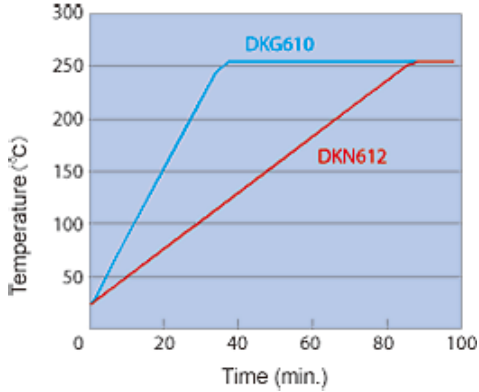
Operation modes

1. Fixed value operation
2. Fixed value quick auto start operation
3. Fixed value auto start operation
4. Program operation
30 steps x 1, 15 steps x 2, 10 steps x 3
Pattern repeat function

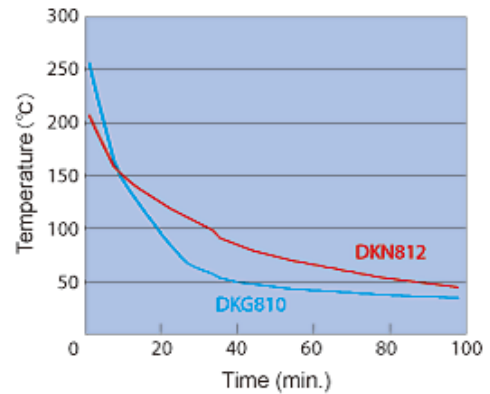
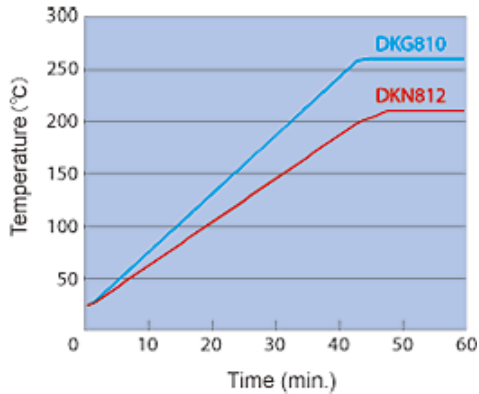
Useful functions

1. Calibration offset function
2. Key lock function

■ DKG610 Comparison of temperature increase/decrease time with conventional products



■ DKG810 Comparison of temperature increase/decrease time with conventional products

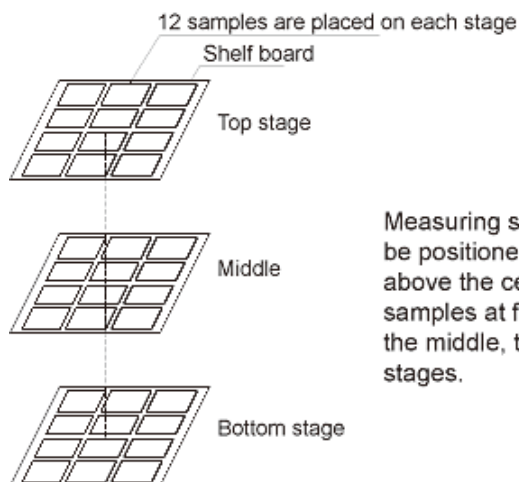


Reference data of loaded conditions

Model	Temp.	Average temp. increase time	Distribution width	Average temp. decrease time
DKG610/650	100deg.C	23 min.	0.8 (± 0.4)deg.C.	21 min.
	150deg.C	38 min.	1.7 (± 0.85)deg.C	30 min.
DKG810/850	100deg.C	28 min.	2.6 (± 1.3)deg.C	40 min.
	150deg.C	51 min.	5.2 (± 2.6)deg.C	55 min.

Conditions

1. DKG610/650: Install shelves on all stages (7 stages) and place 12 samples on each stage. \perp DKG810/850: Install shelves on all stages (15 stages) and place 12 samples on each stage. \perp A sample is a 370g box of folded stainless steel plate (size 145 x 105 x 20 mm x thickness 2.0 mm).



2. Measuring points shall be the center and points 15 mm above the centers of the samples at four corners of the middle, top and bottom stages.

3. Increase time shall be the average of the shortest and longest times for the measured time to reach the target temperature +10deg.C for nine points.

4. Decrease time shall be the average time to cool down from 260deg.C to 50deg.C with the damper fully opened for all of nine measured points.

5. Temperature distribution width shall be a value for a stable range after the set temperature is reached and shall be the difference between the highest and the lowest temperatures (highest temperature - lowest temperature/2) of measured temperatures at nine points.

Internal chamber

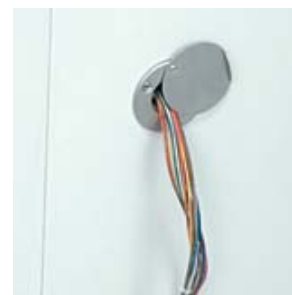


DKG610 (measuring reference data of loaded condition)

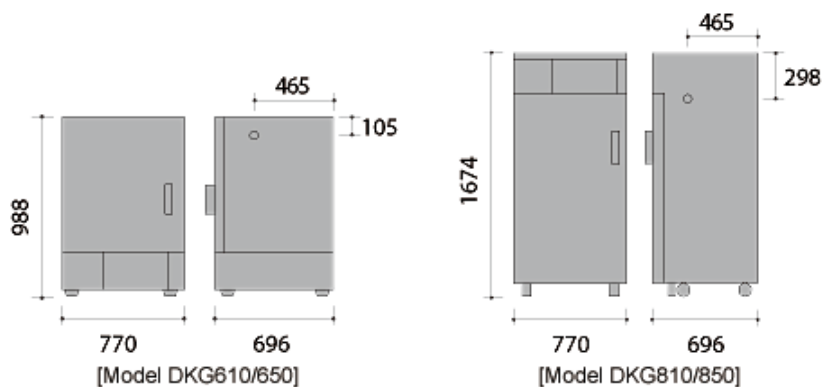


DKG810

Cable port



■ Dimensional drawing (mm)



■ Optional items

Remark	Description	Model No.	Product Code
●	External Alarm Terminal/ Time-up Output Terminal (to choose either) *	DKG Series	281561
	* In case Auto Damper is chosen, External Alarm Terminal will become Time-up Output Terminal.	DKG Series	
	* Signal Tower is also available upon request.	DKG Series	
○	Stand: ON62 stand for DKG610/610V/650/650V	DKG Series	281540
●	I.D.25mm cable port	DKG Series	281558
●	I.D.50mm cable port	DKG Series	281559
●	Temperature output terminal (4-20 mA)	DKG Series	281560
●	External communication function (RS485)	DKG Series	281562
●	External communication adapter (RS232C conversion)	DKG Series	281563
●	Independent overheat preventive device	DKG Series	281564
●	Automatic damper	DKG Series	281565

Note:

1. The item marked " ● " in the column of "Remark" shall be ordered together with the main unit.
2. The transportation cost will not be required if the order is together with main unit except the item marked "○". In case you order the item marked "○" together with the main unit, please ask Yamato to obtain the correct transportation cost.