

Fine Oven

With high accuracy temperature control and exhaust damper

DF412/612, DH412/612

Operating
temp. range

RT +15°C~260°C
DF412/612

RT +15°C~360°C
DH412/612

Temp. gradient

10°C (at 260°C)
DF412/612

12°C (at 360°C)
DH412/612

Internal
capacity

91L
DF412/DH412

216L
DF612/DH612

Highly reliable and accurate oven with simple settings for various temperature characteristics tests that require complicated programming.

- Simple operation by interactive key input.
- Operation monitor visualizes controller status, temp and temp. changing.
- Incorporates with maximum 99 steps, 99 patterns program controller with repeat function.
- Loaded with total operation hours timer.
- Exhaust damper allows quick exhaust and cooling of inside.
- Accumulated timer function useful for maintenance and management is equipped as standard.
- Cable port useful for a monitor for temperature during testing is equipped as standard.

Interior



91L
DF412+OP46 (Option)



216L
DH612+OP66 (Option)

Specifications

Product code	211780	211781	211782	211783
Model	DF412	DF612	DH412	DH612
System	Forced convection and ventilation			
Operating temp. range	Room temp. +15~260°C		Room temp. +15~360°C	
Temp. control accuracy*1	± 0.1°C (at 260°C) JTM K05		± 0.2°C (at 360°C) JTM K05	
Temp. fluctuation*1	1.0°C (at 260°C) JIS		2.0°C (at 360°C) JIS	
Temp. distribution accuracy*1	± 1.5°C (at 260°C) JTM K05		± 2.5°C (at 360°C) JTM K05	
Temp. gradient*1	10°C (at 260°C) JIS		12°C (at 360°C) JIS	
Time to attain max. temp.*1	Approx. 50 min. (to 260°C)		Approx. 60 min. (to 360°C)	
Temp. control system	PID control with a micro computer			
Temp. and time setting system	Digital setting by UP/DOWN key			
Timer	1 min. to 99 hr 59 min. and 24hr. setting			
Operation and manipulation functions	Fixed temp., auto-start, auto-stop, quick auto stop, program (max.99 steps, 99 patterns, repeat)			
Additional functions	Calendar timer (max. 24 Hrs.), Integration time (max. 65535Hrs.), Calibration off-set, Display the amount of power consumption / CO ₂ discharge / Heater operation amount, Power failure recovery mode, User setting information save and recall, Wind velocity changeable function			
Sensor	Double K-thermocouple			
Heater	Stainless pipe heater			
Blower fan / Motor	Axial flow fan / Capacitor motor			
Cable port	I.D. 33 mm×1 pc. (rear)			
Heat insulator	Glass wool			
Safety device	Self diagnosis functions (Sensor, Heater, Relay, Triac, Automatic overheat prevention), Independent overheat prevention, Key lock function, Electric leakage breaker, Door switch, Fan error			
Internal dimensions (W×D×H) (mm)	450×450×450	600×600×600	450×450×450	600×600×600
External dimensions*2 (W×D×H) (mm)	1,050×630×850	1200×780×1000	1,050×630×850	1200×780×1000
Internal capacity	91L	216L	91L	216L
Withstand load of shelf board	Approx. 30kg / pc			
No.of shelf stages/peg pitch	9 steps / 45mm	9 steps / 60mm	9 steps / 45mm	9 steps / 60mm
Power source 50 / 60 Hz	AC220V Single phase, 10A	AC220V Single phase, 15A	AC220V Single phase, 13A	AC220V Single phase, 19A
Weight	Approx. 112 kg	Approx. 156 kg	Approx. 112 kg	Approx. 156 kg
Stainless wire shelf / bracket	2 pcs / 4 pcs	3 pcs / 6 pcs	2 pcs / 4 pcs	3 pcs / 6 pcs

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

*2 Do not include protrusions.

Forced convection
circulation

Auto overheat
prevention

Independent
overheat protector

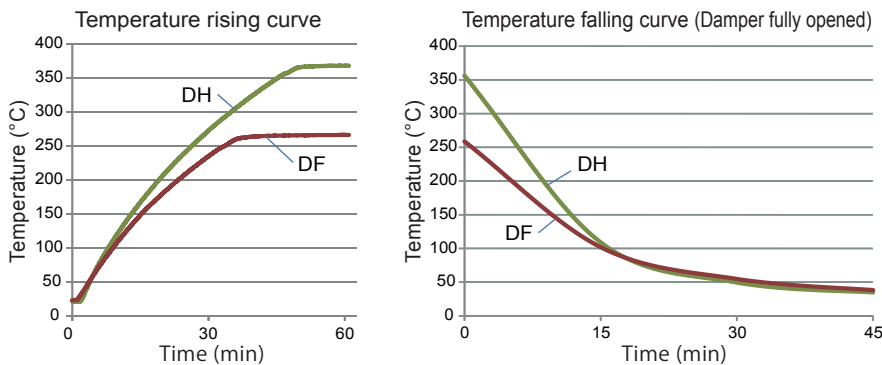
Self-diagnosis

Key lock

Power outage
compensation

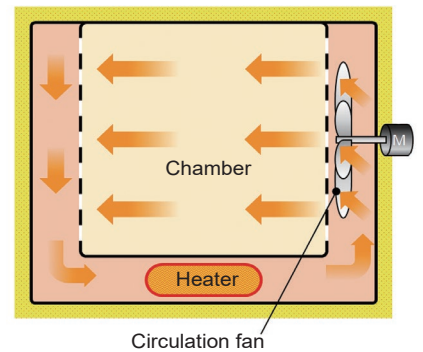
Overcurrent
ELB

Performance



Method

[Front view]



Optional Items

No.	Description			Product code
①	Stand (without caster)	OP43	for DF/DH 412	415464
②	Stand (without caster)	OP63	for DF/DH 612	415465
③	Stand (with caster with front side stopper)	OP46	for DF/DH 412	415466
④	Stand (with caster with front side stopper)	OP66	for DF/DH 612	415467
⑤	Stacking support	ODF48	for DF/DH Series	213700
⑥	Stainless wire shelf (loading up to 30 kg/shelf)		for DF/DH 412	211063
⑦	Stainless wire shelf (loading up to 30 kg/shelf)		for DF/DH 612	211064
⑧	Stainless punching metal shelf (loading up to 15kg/shelf)		for DF/DH 412	211098
⑨	Stainless punching metal shelf (loading up to 15kg/shelf)		for DF/DH 612	211099
⑩	Stainless mesh basket shelf (loading up to 15 kg/shelf)	ODT12	for DF/DH 412	212924
⑪	Stainless mesh basket shelf (loading up to 15 kg/shelf)	ODT14	for DF/DH 612	212925
⑫	*Observation window (for DF Type only)	ODF50	for DF 412	213701
⑬	*Observation window (for DF Type only)	ODF52	for DF 612	213702
⑭	*Automatic damper : 5 steps : 5%-25%-50%-75%-100%	ODF60	for DF/DH Series	213706
⑮	*Exhaust duct (80mm dia)	ODF54	for DF/DH 412	213703
⑯	*Exhaust duct (80mm dia)	ODF56	for DF/DH 612	213704
⑰	*Flange for exhaust port	ODF46	for DF/DH Series	281069
⑱	*Emergency stop switch	ODF64	for DF/DH 412	213708
⑲	*Emergency stop switch	ODF66	for DF/DH 612	213709
⑳	*Recorder (6 points type) (YHR-150+cable)	ODF62	for DF/DH Series	213707
㉑	*Power cord, 8m	ODF68	for DF/DH 412	213710
㉒	*Power cord, 8m	ODF70	for DF/DH 612	213711
㉓	*External communication terminal (RS485)	ODF72	for DF/DH Series	213712
㉔	*External communication adapter set	OIN90	for DF/DH Series	211880
㉕	*Temperature output terminal (4-20mA)	ODF74	for DF/DH Series	213713
㉖	*External alarm output terminal	ODF76	for DF/DH Series	213714
㉗	*Time up output terminal	ODF78	for DF/DH Series	213715
㉘	*Operation signal output terminal	ODF80	for DF/DH Series	213716
㉙	*Event output terminal	ODF82	for DF/DH Series	213717
㉚	*Additional sensor (sheath sensor)	ODT48	for DF/DH Series	212946
㉛	Silicon plug (with one hole, for DF type only)	ODT52	for DF Series	212947
㉜	*Cable port, 25mm dia. (Top)	ODF84	for DF/DH Series	213718
㉝	*Cable port, 50mm dia. (Top)	ODF86	for DF/DH Series	213719
㉞	*Cable port, 25mm dia. (Rear)	ODF88	for DF/DH Series	213720
㉟	*Cable port, 50mm dia. (Rear)	ODF90	for DF/DH Series	213721

* Please specify when ordering main unit.

Control Panel

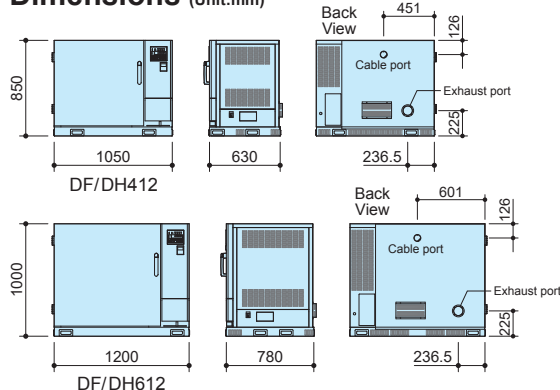


Option mounting example

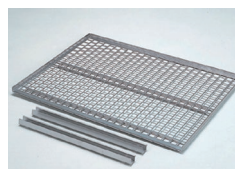


- ③ Stand (with casters) (415466)
- ⑫ Observation window (213701)
- ⑮ Exhaust duct (213703)
- ⑱ Emergency stop switch (213708)
- ㉚ Paperless recorder (Built-in) (213707)

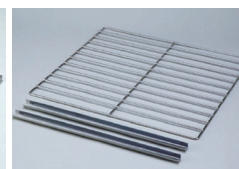
Dimensions (Unit:mm)



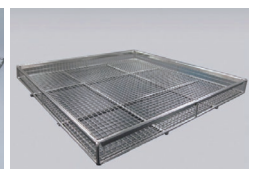
Shelf / Bracket



Stainless punching metal
(Weight tolerance 15kg/pc)



Stainless wire
(Weight tolerance 30kg/pc)



Stainless mesh basket shelf
(loading up to 15kg/shelf)
(Placed on top of the standard shelves)