

# Laboratory Industrial OVENS



**JSR**

[주] 제이에스리서치  
JS Research Inc.

# Ovens

## SELECTION GUIDE

## LABORATORY INDUSTRIAL

## Wide range of Choice

### JSOF-Series Forced Convection Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller
- 5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-050	48 L	amb. + 10 °C ~ 250 °C	± 0.2 °C
JSOF-100	100 L		± 0.3 °C
JSOF-150	151 L		± 0.3 °C
JSOF-250	252 L		± 0.3 °C

### JSON-Series Gravity Convection Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller
- 5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSON-050	48 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSON-100	100 L		± 0.3 °C
JSON-150	151 L		± 0.5 °C
JSON-250	252 L		± 0.5 °C

### JSOF-T Series Upright Convection Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller
- 5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-250T	250 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSOF-400T	372 L		± 0.3 °C
JSOF-700T	655 L		± 0.3 °C

### JSOF-S Series Dry Heat Sterilizer

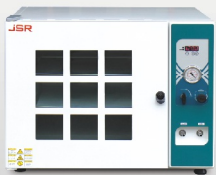


- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-030S	33 L	amb. + 10 °C ~ 250 °C	± 0.2 °C
JSOF-050S	48 L		± 0.2 °C
JSON-030S	33 L		± 0.3 °C
JSON-050S	48 L		± 0.3 °C

## JSVO-Series Vacuum Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ 760 mmHg Vacuum



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSVO-30T	27 L	amb. + 10 °C	± 2.0 °C
JSVO-60T	64 L	~ 250 °C	± 2.0 °C

## JSOF-H Series 350 °C Hi-Temp Oven



- ▶ Max. 350 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller  
5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-030H	27 L	amb. + 10 °C ~ 350 °C	± 0.2 °C
JSOF-100H	96 L		± 0.3 °C
JSOF-150H	150 L		± 0.3 °C

## JSCO-Series HEPA Filter Clean Air Oven



- ▶ H14 (ISO Class5) 99.995% efficiency HEPA Filter
- ▶ Max. 250 °C
- ▶ Program Controller  
5 PTN 80 SEG
- ▶ RS-232C or 485 [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSCO-150T	168 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSCO-300T	336 L		± 0.3 °C
JSCO-1200T	1200 L		± 0.5 °C

## JSOF-W JSIO-Series Industrial Oven



- ▶ Max. 250 °C
- ▶ Constant Temperature
- ▶ Timer On / Off
- ▶ RS-232C or 485 [OPTION]
- ▶ Program Controller  
5 PTN 80 SEG [OPTION]



MODEL	CAPACITY	TEMPERATURE	ACCURACY
JSOF-400W	2 x 432 L	amb. + 10 °C ~ 250 °C	± 0.3 °C
JSOF-600W	2 x 612 L		± 0.3 °C
JSIO-400T	410 L		± 0.3 °C
JSIO-960T	960 L		± 0.5 °C
JSIO-1400T	1386 L		± 0.5 °C
			± 0.5 °C

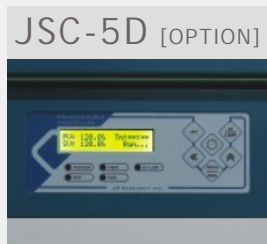
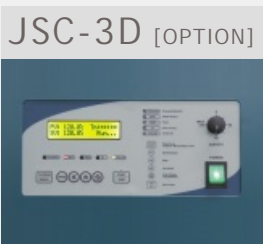
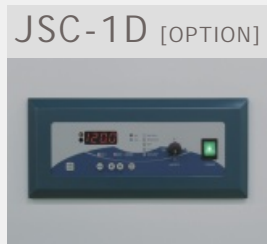
# Ovens

## FEATURE

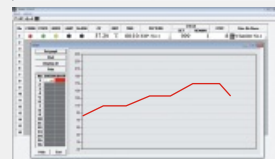
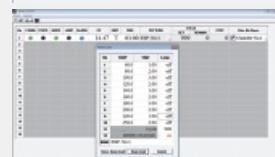
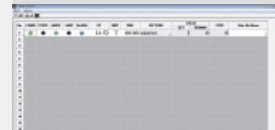
# PRECISION CONTROL HIGH PERFORMANCE Standards & Options

## Controller Guide

	JSC-0D Basic Controller	JSC-1D Digital PID Controller	JSC-3D Programmable Controller	JSC-5D Programmable Controller
Type	Digital PID		16-bit Microprocessor	
Display	LED		2-Line Back light LCD	
Operation	Constant Temperature		Constant Temp. Mode Program Mode	
Accuracy	± 0.1 °C		± 0.1 °C	
Timer	Auto START/STOP		Auto STOP	
Timer Scale	Max. 99min 59sec / 99hr 59min / 99 day 23hr selectable		Max. 99min 59sec / 99hr 59min selectable	
Programming	n/a	n/a	Yes	Yes
Pattern Memory			1 Pattern	5 Patterns
Max. Segment			11 Segments	80 Segments
Max. Repeats			999 or unlimited Segment Skip	999 or unlimited Segment Skip Pattern Link
RS-232C or RS-485	n/a	Yes [OPTION]	Yes [OPTION]	Yes [OPTION]
PC Software	n/a	Yes [OPTION]	Yes [OPTION]	n/a
Calibration	Yes	Yes	Yes	Yes
Auto-tuning	Yes	Yes	Yes	Yes



### ▶ PC Software [OPTION]



- ▶ RS-232C Serial Port Communication
- ▶ Turn On and Off control
- ▶ Temperature and Timer Setting
- ▶ Pattern Programming and uploading
- ▶ Current temperature Graph Rendering
- ▶ Temperature Data Logging
- ▶ Alarm Signal
- ▶ RS-232C 시리얼 포트 통신
- ▶ 작동, 정지 제어
- ▶ 온도 설정, 타이머 설정 기능
- ▶ 패턴 프로그래밍 기능
- ▶ 작동 중 온도 그래프 표시 기능
- ▶ 온도 데이터 수집 및 저장 기능
- ▶ 알람 현황 표시

#### ASCII Data Collection

Date	Time	Temp	Step	Seg	Cycle
2014:01:07	09:00:00	120.00	00:05	03	001/999
2014:01:07	09:00:10	120.01	00:05	03	001/999
2014:01:07	09:00:20	120.01	00:05	03	001/999
2014:01:07	09:00:30	120.00	00:05	03	001/999

# Performance & Convenience

## ▶ Construction



- ▶ Durable epoxy powdercoated metallic casing
- ▶ Ventilation damper
- ▶ 내구성이 뛰어난 에폭시 분체 도장
- ▶ 수분 및 증기 배출 배기구 장착

## ▶ Chamber



- ▶ Corrosion resistant Stainless Steel 304 chamber with seamless round cornered edge allows easy cleaning and prevent leakage
- ▶ 내부식성이 뛰어난 Stainless Steel 304 재질의 챔버 코너는 이음새없이 라운드 처리 되어 있어 세척이 간편

## ▶ Door Window



- ▶ Double layered glass window for easy observation of samples
- ▶ Non-contact door switch cut-off heater and blower
- ▶ 이중 강화유리 도어 투시창
- ▶ 비접촉식 도어센서 장착, 도어 개방시 히터 및 팬 동작 정지

## ▶ Removable Shelf



- ▶ Removable and height adjustable Stainless Steel Wire Shelf
- ▶ 25mm 간격으로 높이 조절 가능한 스테인레스 스틸 와이어 선반

# Safety



- ▶ DUAL OVER TEMP. CUT-OFF
  - 1) Digital system cut-off heater and AUDIO VISUAL ALARM in case +2°C above set temperature
  - 2) Analog system cut-off heater 10% above set temp.
- ▶ MAX TEMP CUT-OFF heater and AUDIO VISUAL ALARM when +1°C above maximum limit
- ▶ DOOR SENSOR : Non-contact magnetic door switch cut-off heater and/or blower when door opened
- ▶ SENSOR DISCONNECTION ALARM
- ▶ OVER CURRENT CUT-OFF : Electrical Leakage Breaker

### ▶ 이중과열방지장치

- 1) 설정 온도 +2 °C 초과 시 히터 차단 및 시청각 알람
- 2) 콘트롤러 오류로 지정 온도 10% 초과 시 히터 차단

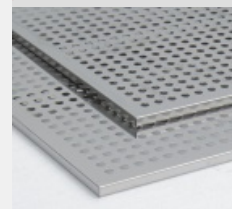
### ▶ 최고온도알람기능 : 작동한계 온도 +1°C 초과시 히터 차단

### ▶ 도어스위치 : 도어를 열면 히터와 팬이 정지하여 열기로 부터 사용자를 보호하고 과열 방지

### ▶ 센서단락알람

### ▶ 누전차단기 : 전기누설 시 주전원 차단

## ▶ Option



- ▶ Stainless Steel 304 Perforated Shelf
- ▶ Stainless Steel 304 타공 선반

# Vacuum

## SPECIAL OVENS

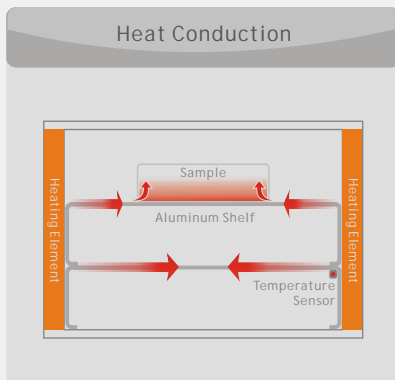
# EVAPORATION DEGASSING under Vacuum






## Vacuum Oven

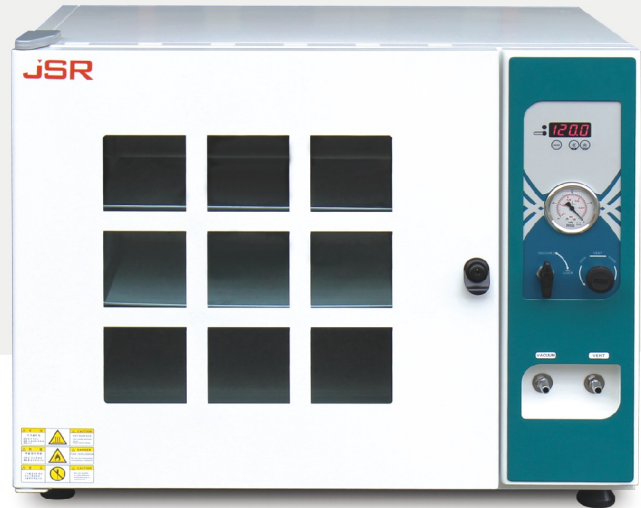
Vacuum Drying Oven is suitable for drying out liquids or solvents contained in a samples or materials in vacuum environment to achieve low heat of vaporization or sublimation point. Ideal for Vacuum Distillation, Vacuum Sublimation or Vacuum Drying application of material science or electronic parts and assemblies.

Also suitable for drying out fine powders in vacuum environment without air convection to prevent diffusion of such samples.

Drying, curing, de-gassing, aging, removing moisture or solvent from fine powder or solid material, accelerating drying time, drying temperature sensitive material, drying in anaerobic condition, remove solvent from DNA, RNA or protein, drying unidentified material characteristic.

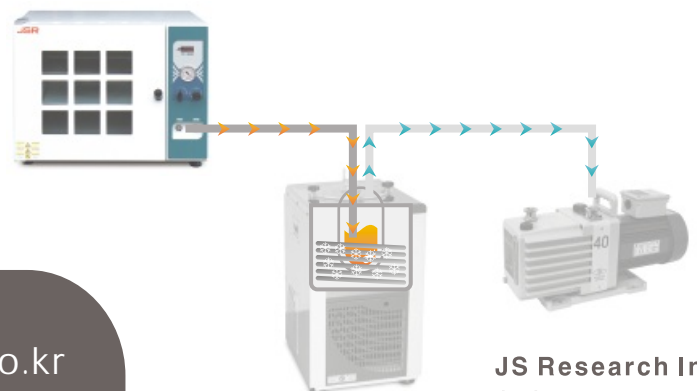


-  Vacuum 760 mmHg
-  Max 250 °C
-  Constant Temperature Controller
-  Timer On / Off 



## Specifications

Heating	Heat transduction through aluminum shelf
Temp. Range	ambient + 10 °C ~ 250 °C
Accuracy	± 2.0 °C at 120°C (Shelf surface)
Uniformity	± 3.0 °C at 120°C (Shelf surface)
Vacuum	760 mmHg
Controller	Microprocessor PID Control Wait ON / OFF Timer
Sensor	Class A Pt 100 Ω Sensor
Safety	Over-Temperature Cut-Off Over Current Cut-Off
Material	Body : Steel with Epoxy Powder Coating Chamber : Electro-Polished Stainless Steel 304 Shelf : Anodized Aluminum Insulation : 50mm Woven Mineral Wool
Electric	220 ± 10% VAC 50/60Hz



## Control Accuracy

- ▶ ±0.1 °C Digital PID Controller with automatic START/STOP timer max. 99min 59sec / 99hr 59min / 99 day 23hr
- ▶ Temperature calibration, auto-tuning function
- ▶ Class A Pt-100 Ω sensor
- ▶ 정밀한 PID 컨트롤러는 온도를 ±0.1 °C 단위로 제어
- ▶ 예약 / 정지 타이머 내장 99분59초/99시간59분/99일23시간
- ▶ 온도보정, 오토튜닝 기능 내장
- ▶ Class A Pt-100 Ω 온도 센서

## Performance

- ▶ Heater from sidewall transduce heat through aluminum shelf to maintain uniform temperature over the surface of shelf
- ▶ Class A Pt-100 Ω sensor embedded into the aluminum shelf to measure accurate temperature of the shelf
- ▶ 50mm thick high thermal efficiency mineral wool with woven aluminum barrier sheet saves energy and less dust
- ▶ 챔버 외부 양측면에서 알루미늄 선반을 가열 효율적으로 열을 전도하여 선반 표면 전체의 온도가 균일
- ▶ Class A Pt-100 Ω 온도 센서가 선반의 온도를 직접 측정, 제어하여 온도 편차가 적음
- ▶ 50mm 두께의 고효율 단열재는 알루미늄 피복층이 있어 에너지 소비가 적고 분진이 없음

## Convenience

- ▶ Corrosion resistant Stainless Steel 304 (ASTM 304) solid chamber interior
- ▶ Door with 15mm thick tempered safety glass window with safety grill
- ▶ Vacuum tight high density one-piece silicone door gasket
- ▶ Air tight one touch door latch
- ▶ Two tier aluminum shelf
- ▶ Equipped with Vacuum Gauge -760mmHg ( -0.1Mpa)

## Ordering Information

	JSVO-30T	JSVO-60T
Chamber Volume (Capacity)	27 L	64 L
Dimensions Inner	300 x 300 x 300	400 x 400 x 400
W x D x H mm Outer	665 x 470 x 535	765 x 575 x 635
Temperature Range	ambient +10 °C to 250 °C	
Accuracy at 120°C	± 2.0 °C	
Uniformity at 120°C	± 3.0 °C	
Glass Window	W265 x H285	W350 x H350
Maximum Vacuum	15 mm Thick Tempered Safety Glass 760 mmHg	
Fitting	Vacuum / Vent Φ 11 mm Hose Barb	
Valves	Vacuum/Lock : 2-Way Valve Vent : Needle Valve	
No. of Aluminum Shelf included	2	
Heater Capacity	2 x 1.0 kW	4 x 700 W
Power Rating	9.2 Amp	12.9 Amp
Power Plug	CEE 7/7 Schuko	

- ▶ Two way valve to control vacuum and lock
- ▶ Adjustable needle valve for fine control of vent speed

- ▶ 내부식성이 강한 Stainless Steel (SUS304) 챔버
- ▶ 챔버 내부에 구조물이 없어 오염이 적고 세척이 간편
- ▶ 도어 전면에 15mm 두께의 강화유리 투시창과 안전그릴
- ▶ 내열성이 강한 일체형 고밀도 실리콘 도어 가스켓 장착
- ▶ 밀착력이 뛰어난 원터치방식의 도어 잠금 장치
- ▶ 2단 알루미늄 선반
- ▶ 진공게이지 장착 -760 mmHg (-0.1 MPa)
- ▶ 진공 / 잠금 2-Way 밸브
- ▶ 배기 속도 조절이 가능한 진공해제밸브

## Safety

- ▶ DUAL OVERTEMP. CUT-OFF
- ▶ MAX TEMP CUT-OFF
- ▶ SENSOR DISCONNECTION ALARM
- ▶ OVER CURRENT CUT-OFF : Electrical Leakage Breaker

## Accessories

Art No.	Descriptions
	Aluminum Shelf
PHS-A91	for JSVO-30T W295 x D250mm
PHS-A92	for JSVO-60T W395 x D350mm
	Vacuum Pump
W2V10	Rotary Vane Vacuum Pump 100L/min 5x10 <sup>-4</sup> Torr Woosung 220VAC
MZ2C	Chemical Resistant Diaphragm Vacuum Pump VACUUBRAND, Germany 220VAC
<i>Page 102</i>	Cold Trap Bath (모델이 추가됨)
J SCT-20C	Cold Trap Bath -20°C, 4 L
J SCT-40C	Cold Trap Bath -40°C, 4 L
OHG-001	Glass Trap
OHV-001	High Vacuum Hose, ID 9mm x OD 24mm, 1 meter