

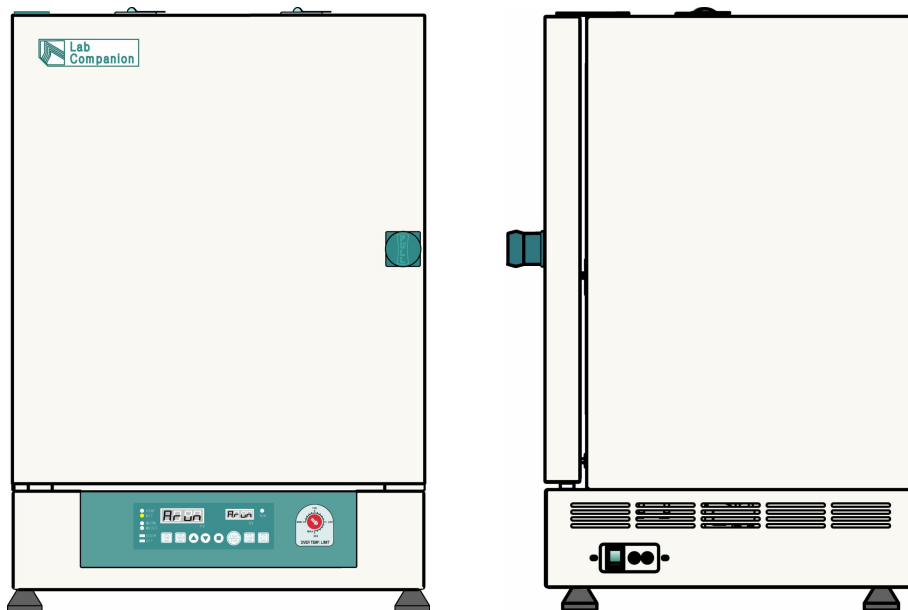


# OPERATING MANUAL

## [NATURAL CONVECTION OVEN]

**Model : ON - 01E / 11E / 21E**

**Manual No : 00HAA0001181 (Version : 5.0)**



This operating manual describes the important subjects to maintain the product's functions and to use it safely. Especially, be sure to read <Safety Precaution> carefully before you use this equipment. Please keep this operating manual close to the equipment to use it after reading through it once.

Please place it where the new user can find it easily for the safety use when you hand over or lend the equipment to others.





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# Chapter 1

## Introduction

Thank you for purchasing the Lab Companion Oven.

Natural Convection Oven is used for all sterilization and drying tasks that do not require high drying rates or special time requirements, ideal for drying applications requiring a gentle airflow.

Before using the oven, please comprehend the manual in detail.

Including;

- Caution about the operating manual
- Warning mark
- Caution for safe operation and unauthorized modification
- Disclaimer







## Caution about the operating manual

1. Always keep this instruction near to the instrument.
2. Copying and distributing part or the whole of this the operating instruction with no permission are prohibited with the law.
3. The operating instruction promised perfection but please ask an agent or us if you have any question about insufficient points, error and omission on the operating instruction.

## Warning mark

1. This operating instruction uses the warning Signal Word for safe operation to prevent the users from accidents or damage beforehand.
2. Defined by the Symbol Mark about the safety caution.

 <b>WARNING</b>	¡Warning¡ means that the user may have serious damage and even die by improper handling on this unit.
 <b>CAUTION</b>	¡Caution¡ means that the user may have minor damage and unit may have physical damage by improper handling on this unit.
	Protective Ground Terminal It marks the terminal must be connected Ground prior to operating the product.
 <b>NOTICE</b>	It marks additional information on the operation and features of the product.

3. Be fully aware of the warning contents during operation.
4. Please exchange original label to the new warning label when it is unreadable from warning out.

 **Please request the new label to an agent or us.**



## **Caution for safe operation and unauthorized modification**

1. In order to protect the product and system, please use the product in accordance with the instructions.
2. We shall not be responsible for any incidental or abnormal operation for breach of any express or implied warranty on this product or any part thereof.
3. It forbids reorganization of Inside of the product or adds.
4. Please contact the agent or us in case of the component and the consumable parts of the product will be replaced.
5. Do not give a strong shock to the product. It becomes the cause of product damage and wrong operations.

## **Disclaimer**

1. In no event will Jeio Tech industries be liable for any incidental or consequential damages for breach of any implied warranty relating to the product.
2. Any special indirect or consequential property or commercial damage of any nature disaster whatsoever. Some cases do not allow the exclusion of incidental or consequential damages, so the above limitation may apply to you.



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## Chapter 2

### Check the condition of unit

Before you install the Oven, inspect it for damage that may have occurred in transportation. Confirm any damage for compensating following the Compensation regulations and transportation of Lab Companion.



## Check the condition of unit before unpack

Protection from any damage occurring in transit, Lab Companion administers excellent packing and radical transportation.

Any damage or loss during transit, all responsibility is filled with the delivery carrier.

After receiving the unit, carefully unpack and inspect it for damage.

If the unit is damaged or loss during transit, Make sure as follows to be protected from the iLab Companion Regulations;


## Confirmation a damaged unit

1. Check the front and rear sides of the unit under packed condition.
2. Carefully unpack the package.
3. Check with care any damage during the transportation of the unit
4. Check the parts (i.e. accessories- Page 9) of the unit.

## Compensation regulation of damaged unit

If the unit is damaged, contact the delivery service company immediately.

1. Keep the condition as it delivered and wait for the confirmation by the carrier.
2. Within 15 days, submit an application be made in writing to the delivery service company.

 <b>NOTICE</b>	<b>Do not discard the carton or packing material for the unit until you have checked all of the damaged parts.</b>
---	--

## Compensation regulation of transport

1. Any damage that is occurred during the transport is responsible to the delivery service company.
2. Except for all damage from the transport, we Jeio Tech will service or return.
3. If Jeio Tech or our authorized dealers do not deliver the unit, Jeio Tech disclaims all the responsibility for the damage.





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## Chapter 3

### Installation

Before installation, be sure to check the electric conditions for electric safe. All persons expected to carry out operation, installation and maintenance of the unit, read and understand the safety information and operating instructions.

Including;

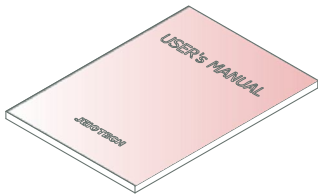
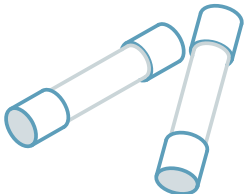
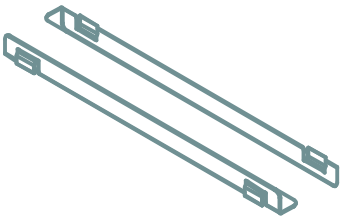
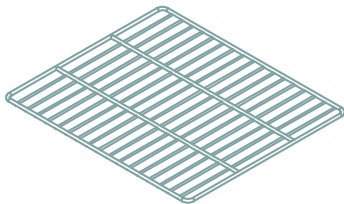
- contents
- Installation
  - Check points
  - Select a proper place
  - Level off
  - Power connection



## Contents

After unpacking, please check listed Bath component description as follows.

If you didn't receive one or more component as follow, Contact the Jeio Tech Service center or the distributor where you purchased.

	
<b>Operating manual</b> After unpacking, check the operating manual. If you didn't receive the operating manual, Contact the distributor or the Jeio Tech service center.	<b>Fuse</b> During being in use, if you contact the service center or the distributor, you will receive the service.
	
<b>Wire Shelf Brackets</b> 4 EA Wire Shelves Bracket included for using 2 EA Wire shelf. If you need more Qty, contact your regional dealer.	<b>Wire shelf</b> 2 EA Wire shelves included. If you need more Qty, contact your regional dealer.



## Installation

The machine should be installed on a safe and proper environment following to the below

### Check Points

- Select a proper place, Level off the machine, - Power connection

### Select a proper place

#### 1. Operating condition

Room condition of temperature and humidity should be normal as 18 °C ~ 25 °C, below 80%RH.

#### 2. Environmental condition

Do not expose the machine to direct ray of light.

#### 3. Setting place

The floor should be on flat and leveled ground.

#### 4. Space

The machine should be kept at least 1.5m from any illuminators and 20 cm from walls.



**CAUTION**

The machine should be operated at the optimum condition for cleanness, electricity and preparation against fire.

### Level off

All of the bottom sides should be leveled.

### Power connection

Check the ID Plate on the back side of the machine to find the electric conditions.

Power must be used upper 2 classes grounded.



**CAUTION**

Check the power plug to find if the electric conditions are correct. The voltage fluctuation should be within 10%.



**WARNING**

Do not connect the power before checking how to do correct operation.



1. Check if the plug condition and electric wires are normal.
2. Check the connection of ground wire.



---

## Chapter 4

# Safety Alert and Caution

 <b>WARNING</b>	<b>Alert</b> shows that users can be dead or seriously wounded by wrong operation.
 <b>CAUTION</b>	<b>Notice</b> shows that users can be wounded or machines broken by wrong operation.

Signal Word is used in the operation manual for safe and proper operation and keeps users from being damaged by accidents. Each Symbol Mark is identified following to the degree of importance and danger.

Pay attention to the Alert and Notice in the manual to avoid from any accidents.



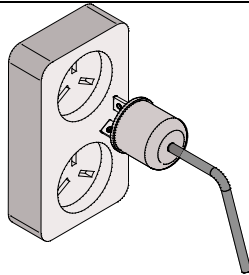
## Safety Alert



# WARNING

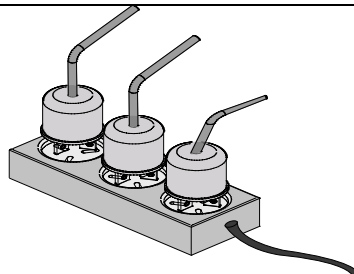
⚠Alert⚠ shows that users can be dead or seriously wounded by wrong operation.

### Main Power



**Check the voltage, phase and capacity on the ID plate, before installation.**

☞ Power plug should be connected the grounded terminal consent.



**Do not connect multiple power cord.**

☞ It can cause fire and malfunction.

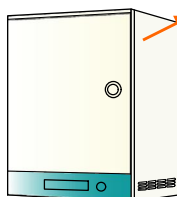
☞ Sources of electricity should be separately wired.



**The sources of electricity should be grounded.**

☞ The sources of electricity without ground connection can cause serious damage to users or the machine.

☞ Don't earth the machine to gas pipes or water pipes.

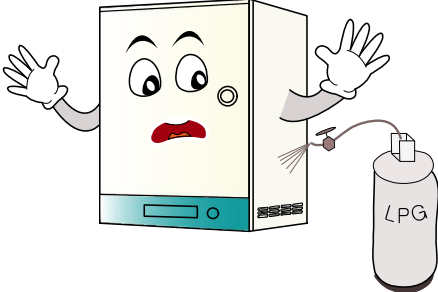
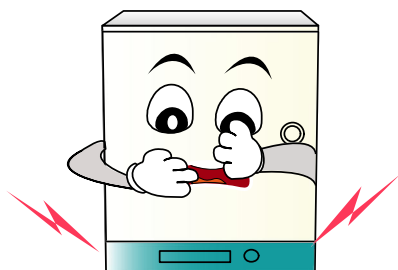


Code No. AAH23212K  
Description Incubated Shaker  
Model SJ-600R  
Voltage 230VAC 1~ 50Hz A 5.5A  
Serial No. M029088  
JERO TECH  
Made in Korea <http://www.jerotech.com>

**Check the power and Hz on the ID plate before installation.**

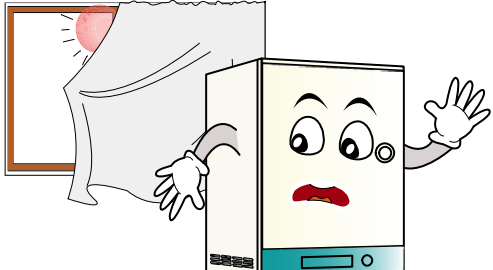
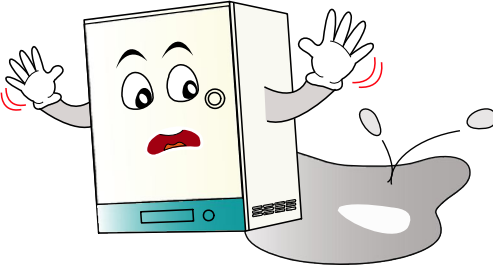
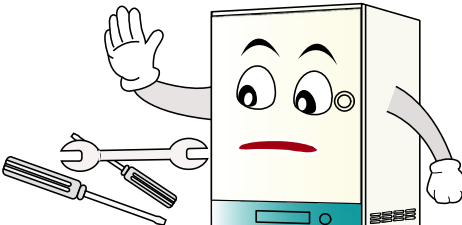


Safety

	<p><b>Don't install the machine near to places where inflammable gas can't be leaked.</b></p> <ul style="list-style-type: none"><li>☞ It can cause fire and malfunction.</li></ul>
	<p><b>Put off the power plug if some sounds and smell, smokes are happened.</b></p> <ul style="list-style-type: none"><li>☞ Request the service.</li><li>☞ It can cause fire and shock.</li></ul>

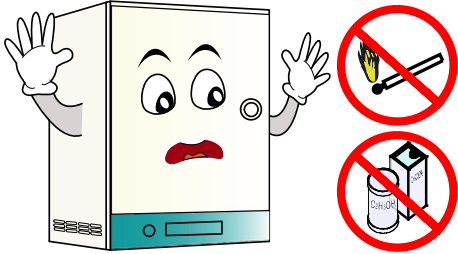
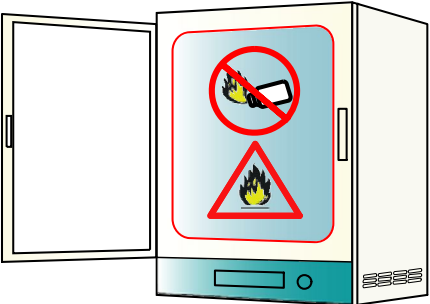

OPERATING

Safety

	<p><b>Keep out of the direct sunlight.</b></p> <ul style="list-style-type: none"><li>☞ It may cause fire and malfunction.</li><li>☞ When use in the direct sunlight please set up a proper interception to make shade.</li></ul>
	<p><b>Do not use the machine at places where moisture is high and flooding can be happened.</b></p> <ul style="list-style-type: none"><li>☞ It can cause fire, shock and malfunction.</li><li>☞ When flooding the unit, Request the service.</li></ul>
	<p><b>Do not disassemble or fix, change the machine.</b></p> <ul style="list-style-type: none"><li>☞ It can cause fire, shock and malfunction..</li></ul>



Safety

	<p><b>Do not put inflammables and explosives near to places where inflammable gas can be leaked.</b></p> <ul style="list-style-type: none"><li>☞ It can cause fire and explosion.</li><li>☞ Do not install the machine in a dangerous area.</li></ul>
	<p><b>Do not put inflammables and explosives in the machine.</b></p> <ul style="list-style-type: none"><li>☞ Do not use the machine near to places where explosion can be happened due to organic evaporating gases.</li></ul> <p>Explosive materials: Acid, Esther, Nitro compound</p> <p>Inflammable materials: salt peroxides, inorganic peroxide, salt acids.</p>
 <b>WARNING</b>	<p><b>Never put the sample on the bottom of chamber (heater blind-patch) It can be danger of overheat or a fire.</b></p>
<p><b>At least 2 persons should move the machine when it is necessary.</b></p> <ul style="list-style-type: none"><li>☞ The weight of Oven is 35 ~ 60kg depending on the model.</li><li>☞ Move the machine using of proper carriage tools.</li><li>☞ The user can be wounded.</li></ul>	



## Safety Caution

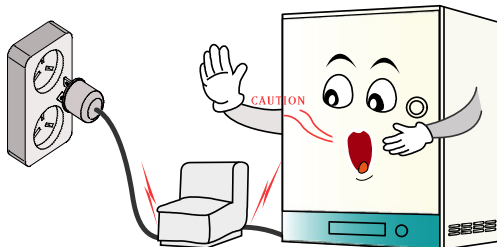
### INSTALLING



# CAUTION

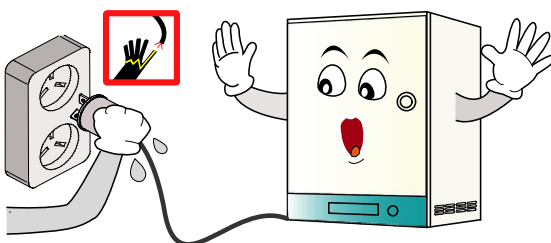
¡Notice! shows that users can be wounded or machines broken by wrong operation.

### Main Power



**Do not put heavy things on the power line. Do not put the machine on the line.**

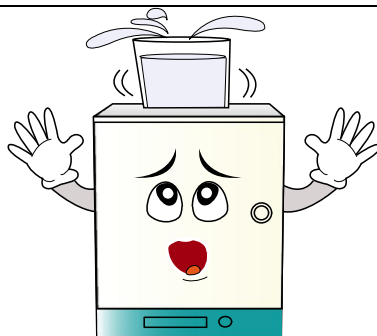
☞ It causes fire and electric shock.



**Connect the plug correctly and do not touch it with hands.**

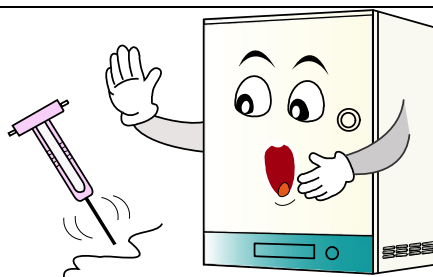
☞ It can cause fire if the connection is not fit.  
☞ It can cause fire and damage to users

### Safety



**Do not make the machine wet while cleaning. Do not put liquid on the machine.**

☞ If the machine is wet, off the power and contact where you purchase the machine to check it



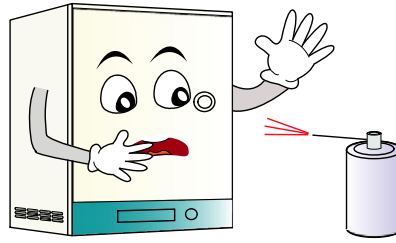
**Do not shock the machine or vibrate it.**

☞ It can cause damage to the machine.



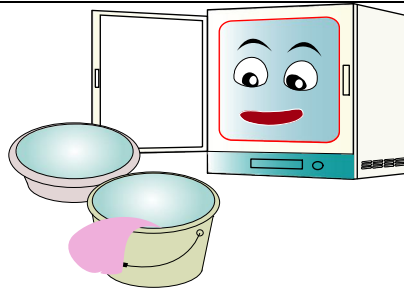


Safety



**Do not spray aerosol and flammable sprayer.**

☞ It can cause fire and damage to users.



**Do not clean the machine with solvent abstergent. Use smooth cloths.**

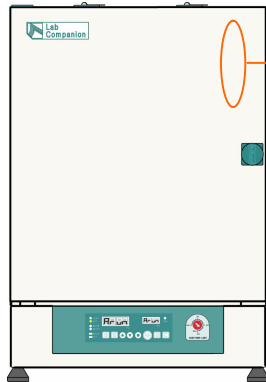
☞ Cleaning with solvent can cause fire and deformity.






## Warning Label

Alert labels are attached on the body for informing of safety and danger. Keep the alerts in mind and follow the instruction




Ask extra labels to where you purchased the equipment if they're damaged.



 <b>ADVERTENCIA</b>		 <b>WARNING</b>
NO INTRODUZCAN MATERIALES EXPLOSIVOS O INFLAMABLES.		Do not locate combustible or explosive materials inside

**\* Warning**

It informs not to put flammable or explosive samples in the chamber.

 <b>ATENCION</b>		 <b>CAUTION</b>
SUPERFICIE CALIENTE. CONTACTO PUEDE CAUSAR QUEMADURA. NO TOCAR.		Hot surface Contact may cause burn. Do not touch

**\* Caution**

Users can be burnt by the hot surface of the chamber due to the high temperature.



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## Chapter 5

# Names of each component & Functions

Please, we recommend that operator learns name of each part of main body and function & and operation of display before using Incubator.

If you do not understand any, please, contact with agent or Jeio tech.

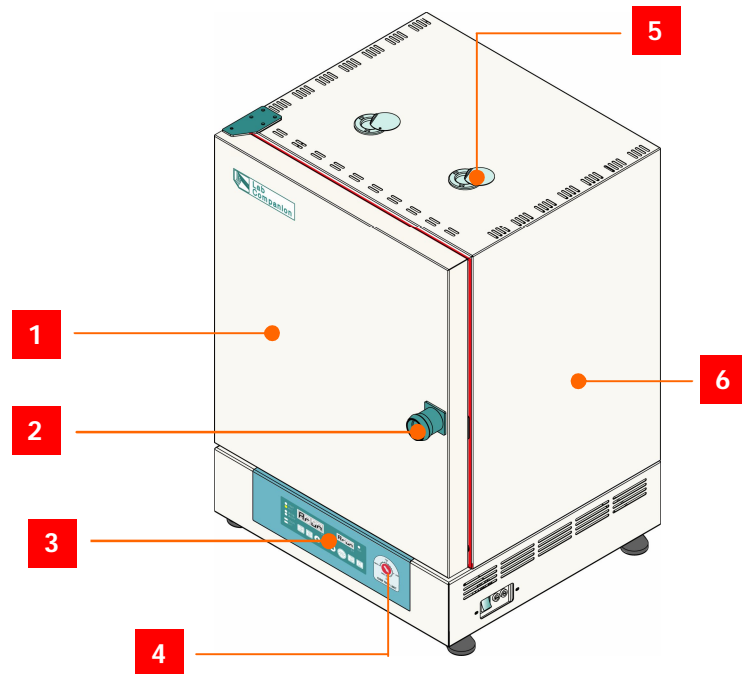
Including;

- Names of each component & Functions
  - Main Body
  - Over temp. limit
  - Door handle
  - Power Switch & fuses
  - Ventilating hole
  - Door Alarm



## Names of each component & functions

Main body



**1. Door**

**2. Door Handle**

**3. Temperature Controller**

Microprocessor has digital PID Auto Tuning, temperature compensation function, heating adjustable, and etc.

**4. Over temp. Limit**

A separate over-temperature cut-out prevents overheating, in the event of out-of-limit status the inner chamber, warning audible and visual alarms.

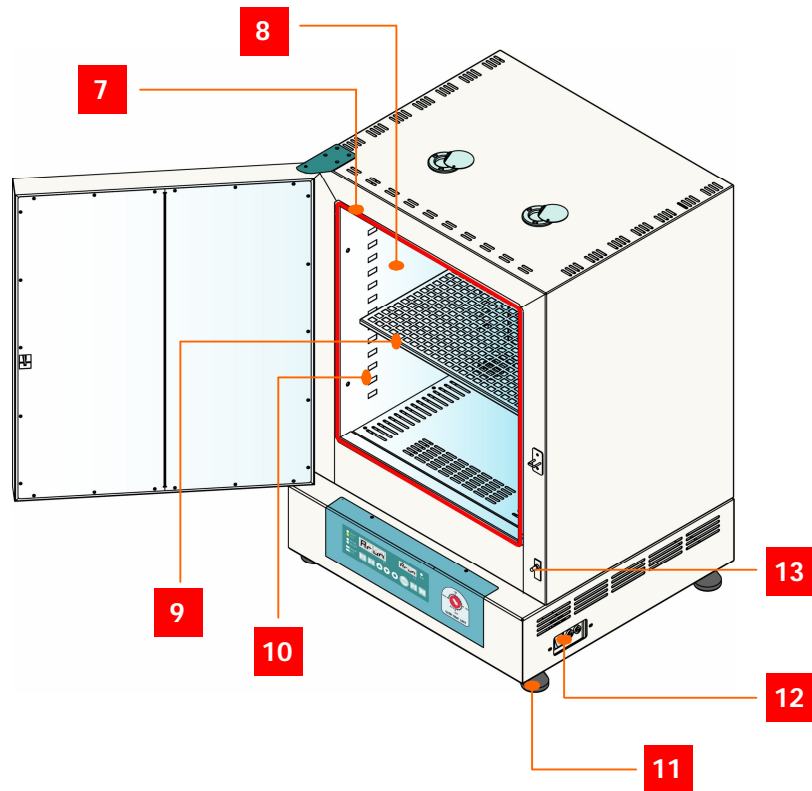
**5. Ventilating Hole**

For inhaling and exhaling air and exhaling moisture.

**6. Body**



Body



**7. Door Packing**

**8. Chamber**

Stainless steel. Heating element, Temperature sensor, and Temperature regulator are inside.

**9. Shelf**

Stainless steel.

**10. Shelf Level Adjustor**

Position of shelf can be adjusted depending on specimen.  
(ON-01E→10 level, ON-11E→14 level, ON-21E→15 level.)

**11. Foot**

It is adjustable for balance.

**12. Power Switch & Fuse**

**13. Door Switch**

Once door opens, fan stops.



## Over Temp. Limit

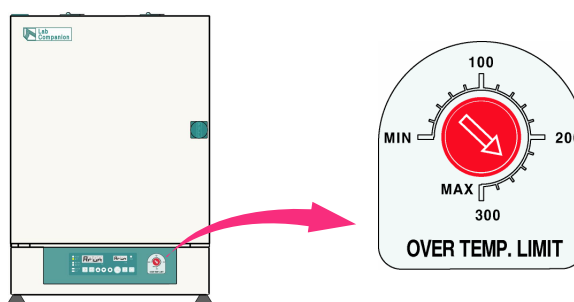
### Over Temp. Limit

This safety device cuts mains of equipment and the unit stops when it detects high temperature over set temperature.

Indication: Buzzer and O/T LED blinking.

To start the unit again, press START/STOP key.

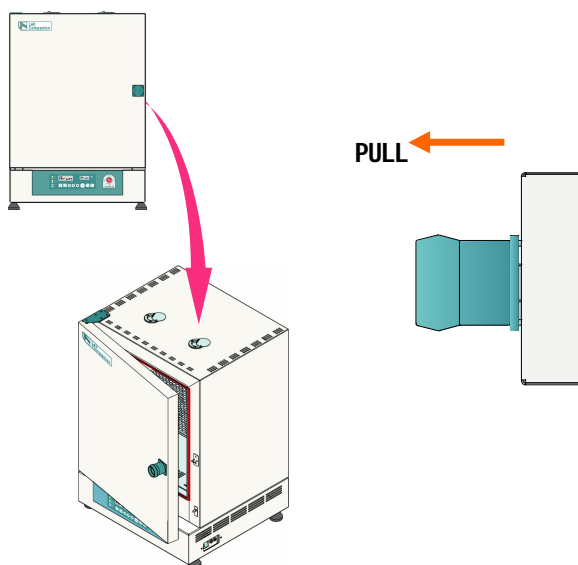
Note) Please, eliminate the potential dangerous factor



## Door Handle

### Door Handle

PULL : Door open.





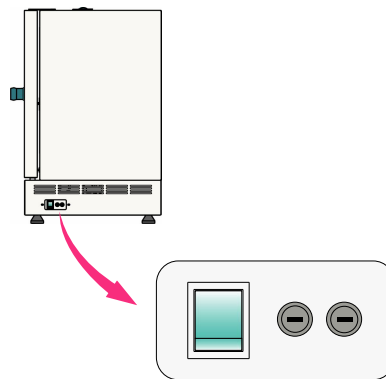
## Power Switch & Fuse

### Power Switch & Fuse

Power Switch : ON/OFF type

Fuse : Safety device is for preventing internal flow from overcurrent.

Model	Rating	
ON - 01E	AC230V, 5A	AC120V, 8A
ON - 11E	AC230V, 8A	AC120V, 10A
ON - 21E	AC230V, 10A	AC120V, 12A



## Ventilating Hole

### Ventilating Hole

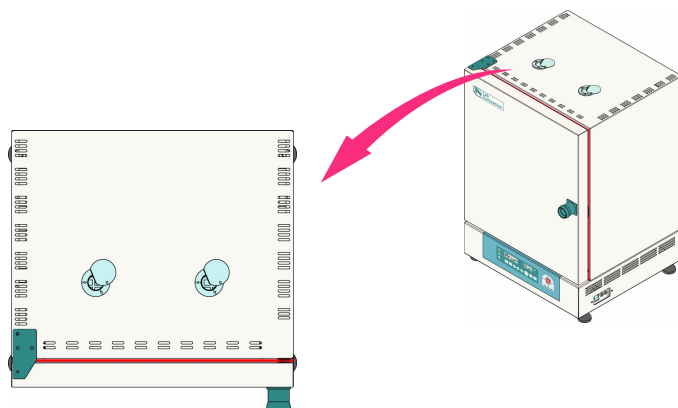
Adjust air flow and moisture.



# CAUTION

Surface is hot. Please, be careful.

Please, wear dry glove to adjust it.





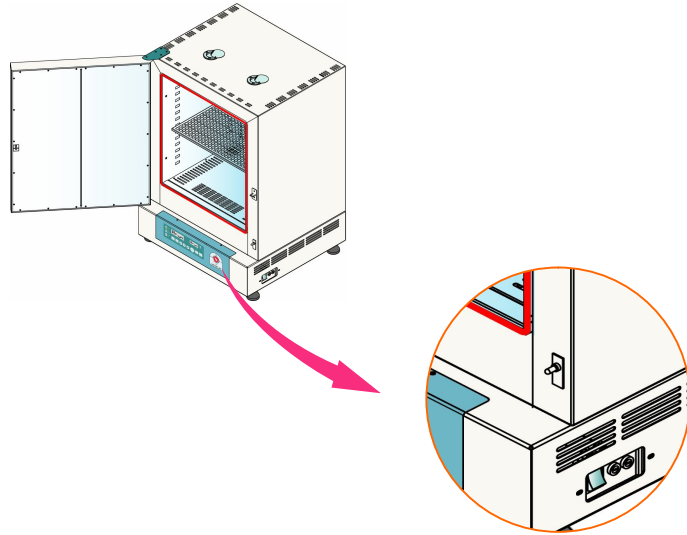
## Door Alarm

### Door Alarm

Door LED is on when door opens.

Function of heating element stops to minimize temperature interference when door opens.

Alarms door opening to user.







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## Chapter 6

# Controlling and functional elements

Please, learn controls and functional element before operating unit.

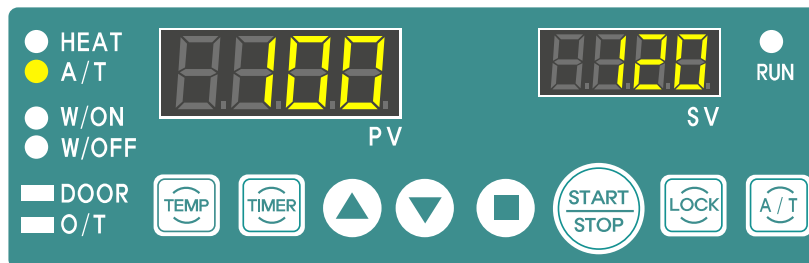
Including;

- Operating and Functional elements
- How to set temperature
- Additional functions of TEMP key
  - Advanced Temperature setting function
  - Example of advanced temperature setting function
  - Changing the temperature
  - BIAS function
- How to set timer
  - On Timer setting
  - Off Timer setting
  - Timer function
  - Cancellation of Wait On/Off Timer function
  - Power failure compensation function of Timer key
- How to set and perform Auto Tune function
- Lock function



Name of display

## Operating and functional element



### 1. PV indicator







Indicates the present value.

### 2. SV indicator






Indicates the set value or remaining time of timer









### 3. Status LED

	<b>Heater LED</b> Indicates the heater output.
	<b>Auto Tune LED</b> Flashes during Auto tune function.
	<b>Wait On Timer LED</b> Indicates time delay on function. ( The unit starts operation automatically when the time reaches time which is set.) Illuminates while operating.
	<b>Wait Off Timer LED</b> Indicates time delay off function. ( Timer starts operation when PV values reaches SV value. The unit stops operation automatically after set time.) Illuminates while operating.



	<b>Door LED</b> When the door is opened, door LED flashes and the power from fan and heater is cut off. Buzzer goes off if the door is not closed more than 1 min. For continual operation, close the door and press start/stop key one time.
	<b>Over temp. LED</b> Indicates when chamber temperature excess over set point of Over temp. limit devie. (Physical setting). Once it starts working, Buzzeer and LED works.
	<b>Run LED</b> Indicates that the unit is working or not. ON : Working Off : No working

#### 4. Keys

	<b>Temp key</b> for temperature setting.
	<b>Timer key</b> For Timer setting.
	<b>Up key</b> For increasing value.
	<b>Down key</b> For decreasing value.
	<b>Enter key</b> For completing and storing value after adjusting and setting value.
	<b>Start/Stop key</b> For starting operation or stop the unit. Or using the key to eliminate warning sound or LED, if the unit stops operating due to unexpected symptoms.
	<b>Lock key</b> Locks all keys. Press and hold Lcok key for 1 second to set or release Lock function.
	<b>Auto Tune key</b> Press and hold the key for 1 second to strat operating Auto Tune fuction.



Except the total time setting mode, the other time setting mode is increased 10 seconds. The 10 seconds time unit is indicated by the side of the  $j$  dot $j$  of minute.



### How to set Temperature

## How to set Temperature



SV indicator



Key operation flow

- ① Press TEMP key.
- ② Value on SV indicator blinks.
- ③ Adjust value by using UP and DOWN key.
- ④ Press ENTER key and finish temperature setting.
- ⑤ Press START/STOP key to start running.

⚠ No key input for 10 seconds during temperature setting, you return to temperature setting.

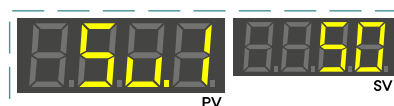
## Additional functions of TEMP key

### How to save set

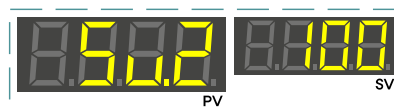
## Advanced Temperature setting function

Set and save up to 3 different temperature as SV1, SV2, and SV3. The values can be select and recall if operator wants.

- ① Press TEMP key 2 times continuously.
- ② SV1 shows on PV indicator, value can be put on SV indicator.



- ③ Adjust value by using UP and DOWN key and press ENTER key to finish temperature setting.



- ④ The value is saved in SV1 and current set value is changed.



- ⑤ If press TEMP key one more time, SV2 shows on PV indicator and a different value can be saved by using UP and DOWN key.

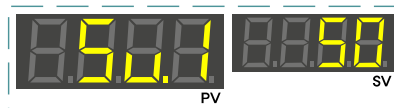
- ⑥ If press TEMP key one more time, SV3 shows on PV indicator and value can be saved.



## Example of advanced temperature setting function

How to use advanced saved temperature on SV1

: Press TEMP key 2 times.

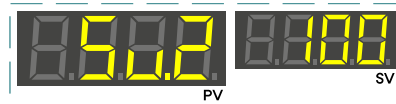


PV & SV indicator

- ① SV1 shows on PV indicator and set point shows on SV indicator.
- ② Adjust value by using UP and DOWN key and press ENTER key to finish SV1 temperature setting.
- ③ Press START/STOP key to control temperature saved on SV1.

How to use advanced saved temperature on SV2

: Press TEMP key 3 times.

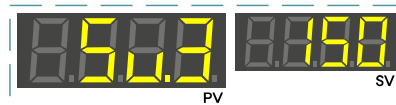


PV & SV indicator

- ① SV2 shows on PV indicator.
- ② Adjust value by using UP and DOWN key and press ENTER key to finish SV2 temperature setting.
- ③ Press START/STOP key to control temperature saved on SV2.

How to use advanced saved temperature on SV3

: Press TEMP key 4 times.



PV & SV indicator

- ① SV3 shows on PV indicator.
- ② Adjust value by using UP and DOWN key and press ENTER key to finish SV3 temperature setting.
- ③ Press START/STOP key to control temperature saved on SV3.

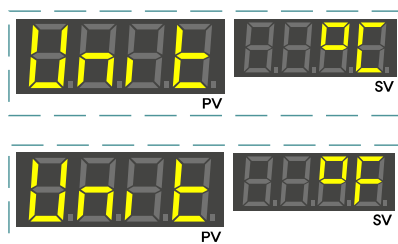


## How to change temperature unit

### Changing temperature

Temperature unit shows on SV indicator and it can be changed depending on customer preference.

Press Temperature key 5 times.



- ① Factory default value is set Celsius degree. (°C)
- ② Press UP and DOWN key and change the value to Fahrenheit degree.(°F)
- ③ Press ENTER key to finish setting.

## BIAS

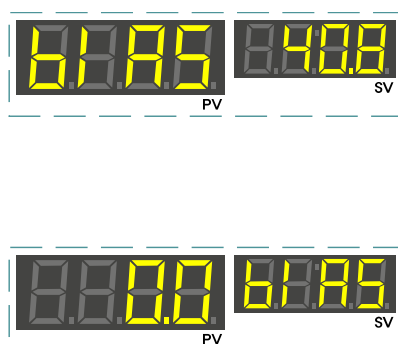
### BIAS function

- Compensates temperature difference between reference sensor and equipped sensor in unit caused by temperature sensor or other reasons.
- Please put a reference sensor at the center of the chamber inside and wait for 5 minutes at least after your reference sensor is stabilized.
- Press TEMP key 6 times.



*Please use certified thermometer as your reference sensor.*

*Please, call service or contact agencies if the temperature difference is same even after performing BIAS .*



- ① BIAS shows on PV indicator and actual temperature inside chamber shows on SV indicator.
- ② Input the difference between your reference sensor and actual temperature inside chamber by using UP and DOWN key.
- ③ Press ENTER key to finish BIAS function and press START/STOP key to start operation.



## How to set Timer

### ON Timer

#### On Timer setting



PV & SV indicator



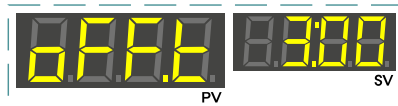
LED status

Press TIMER key 1 time. Type of Timer shows on PV indicator and time shows on SV indicator. ( ON Timer is set at the left side, but it might not be ON Timer set, if you set Off Timer before.)

- ① Input time by using UP and DOWN key and press ENTER key.
- ② W/ON LED blinks, which means that the function starts.

### OFF Timer

#### Off Timer setting



PV & SV indicator



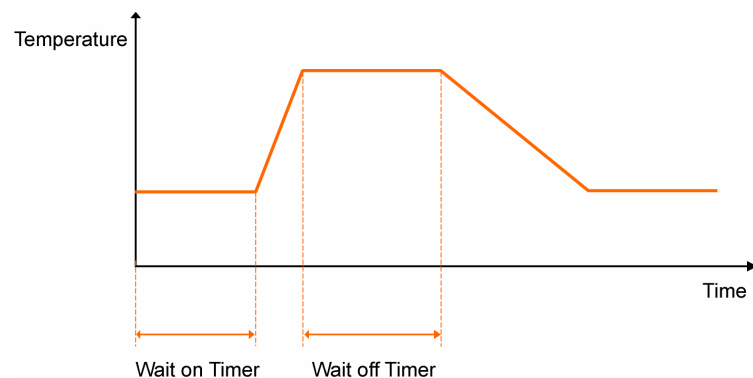
LED status

Press TIMER key 2 times and Off Timer can be set.

- ① Input time by using UP and DOWN key and press ENTER key.
- ② W/OFF LED blinks, which means that the function starts.

### Timer function

#### Timer function



#### ① Wait on Timer

The unit works automatically after lapse of time at On Timer function.

Max : 99hour 59minute, Min : 1minute.



② Wait off Timer

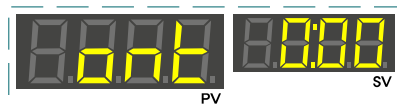
Timer starts when actual temperature reaches set point. And the unit stops after lapse of time at Off Timer.

③ Both Wait on Timer and Wait off Timer.

Both Timer can be set at the same time and it shows the graph on page 31.

Timer cancel

**Cancellation of Wait On/Off Timer function**



Cancellation of Wait On

- ① Press TIMER key 1 or 2 times.
- ② Set time as 0 (Zero) and press ENTER key.



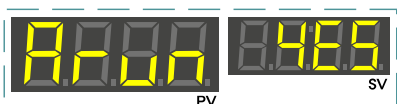
Cancellation of Wait Off

(cf) W/ON, W/OFF LED is off and each Timer function can be cancelled only press ENTER key without any adjustment at ②.

Auto run

**Power failure compensation function of Timer key**

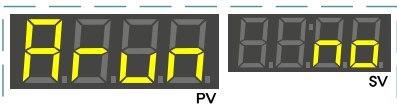
Press TIMER key 3 times.



Auto Run setting

This function is Power failure compensation function.

If YES is set, the unit starts automatically when power recovers after power failure.



Cancellation of Auto Run

- ① Yes or No can be set by using UP and DOWN key.





## Auto tune

**How to set and perform Auto Tune function**

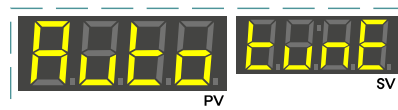
Auto tune function makes the unit better control response.

When Auto tune function needs;

- A. Temperature fluctuation.
- B. It takes too long to reach set point.



*Auto Tune can work during unit working if you press and hold A/T key for about 1 second. Auto Tune shows on PV and SV indicator.*



PV/SV indicator



LED status

- ① Set temperature. (Refer to page 30.)
- ② Press and hold A/T key for 1 second and Auto tune shows on PV and SV indicators. And A/T LED blinks, which means Auto tune function starts.
- ③ Press START/STOP key and RUN LED blinks, which means that Auto Tune starts.
- ④ Once Auto Tune is finished, A/T LED is off and temperature controls.
- ⑤ Auto Tune takes tens of minutes or some hours. Please, do not turn off main switch during Auto Tune.



Recommend please, perform Auto Tuning at the first use of the unit. Also after long period of time, unit needs Auto Tune.

## Lock function

**Lock function**

All keys do not work.



Lock setting

- ① Press and hold Lock key for 1 second and jLockj shows on PV indicator with Beep sound. And all keys do not work any more except Lock key.
- ② To release keys lock, press and hold Lock key for 1 second.



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## Chapter 7

# Maintenance & Troubleshooting

Please maintain the equipment regularly for optimal conditions. This chapter shows symptoms while operation. Please contact us referring to the contents when the equipment has problems. Please keep in mind how to clean the equipment and maintain it regularly.

Including;

- Maintenance
  - Every week/month/quarter/year.
- Keeping and cleaning of the equipment.
  - Keeping/External cleaning/Internal cleaning
- Troubleshooting
  - Power
  - Temperature



## Maintenance

### Every Week

- Check the connection of the accessories.
- Keep clean the surface of the equipment.



Do not clean the bath with sulfuric acid, hydrochloric acid or organic solvent which can cause damage to the surface of the equipment.

### Every Month

- Check the condition of power plug or wires.
- Check the button input condition, set values are input correctly
- Check the condition of ;Over Temp. Limit;



Stop draining water if the water in the bath is hot. User can be burnt. Put gloves when draining.

### Every Quarter

- Check the every week/month ;check point.;
- Check if vibration or noise happens in the equipment.

### Every Year

- Check the every week/month/quarter ;check point.;
- Check the temperature is controlled properly. Check if the constant temperature is maintained.



Maintain the equipment following to the maintenance standard for keeping the equipment under the best condition.



## Safekeeping and Cleaning

### Storage

#### Storage

Keeps the equipment following to the orders below in case no operation for a long time.

1. Power off.
2. Put the plug off from the socket.
3. Keep inside and outside of the equipment clean.
4. Keep the equipment after packing for dust protection.

### External cleaning

#### Cleaning

##### External cleaning

1. Clean the external body by detergent.
2. Clean the external body by soft towel with pure water.
3. Clean the display with dry towel.

### Inner cleaning

##### Inner cleaning

1. Power off.
2. Take off shelves and shelf adjusters from the chamber.
3. Clean in the chamber by soft towel with detergent.
4. Be careful blower and sensor when cleaning inside the chamber.
5. Clean in the chamber by soft towel with water only.
6. Clean them with dry towel.



Be careful not to damage the inner parts while cleaning inside the equipment. It can cause malfunctions.



## Troubleshooting

Follow the below when problems happen.

Please ask service if problems not included in the table happen or can't be solved by the mentioned solutions.

### Power

Symptoms	Causes	Solutions
The equipment is not on.	<ul style="list-style-type: none"> <li>■ The plug is not connected properly to the socket.</li> <li>■ The socket, plug, power line is damaged.</li> <li>■ The equipment is connected to where huge electric loadings are occurred.</li> <li>■ The circuit breaker is down or power failure</li> </ul>	<ol style="list-style-type: none"> <li>1. Check the ID plate on the back to find electric condition whether it's fit to the socket power.</li> <li>2. Plug the power to the socket again.</li> <li>3. Check the socket/plug/power lines and replace with new one if they are damaged.</li> <li>4. Supply power to the equipment with exclusive socket.</li> <li>5. Find the cause of power failure and fix it. Find the cause of electric leakage if the circuit breaker is down and fix it.</li> <li>6. Contact your local dealer to fix the equipment if the problems are not yet solved.</li> </ol>
Circuit breaker is frequently down.	<ul style="list-style-type: none"> <li>■ Electric standard of fuses are not fit.</li> <li>■ Wires are damaged or shorted.</li> <li>■ Power input parts are wet.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check the voltage and Amphere of the fuze and connect them correctly.(Refer to Chapter 2j)</li> <li>2. Replace with a new wires if they are damaged or shorted.</li> <li>3. If the power connecting parts are wet, dry them and reconnect.</li> <li>4. Contact your local dealer to fix the equipment if the problems are not yet solved.</li> </ol>
Circuit breaker of the building is frequently down.	<ul style="list-style-type: none"> <li>■ Too many plugs are connected.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check the voltage capacity supplied to the circuit breaker.</li> <li>2. Check many similar equipments are connected on the socket. Use separate socket not exceeded of the voltage capacity.</li> <li>3. Contact your local dealer to fix the equipment if the problems are not yet solved.</li> </ol>



Symptoms	Causes	Solutions
Controller display shows nothing even though the power is on.	<ul style="list-style-type: none"> <li>■ The plug is not connected properly to the socket.</li> <li>■ The power switch lamp is not on.</li> <li>■ Controller problem.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check whether it's power failure.</li> <li>2. Plug the power to the socket again.</li> <li>3. Poor Power switch. Replace with a new one.</li> <li><i>If not solved;</i></li> <li>4. Replace with a new controller.</li> <li>5. Contact your local dealer to fix the equipment if the problems are not yet solved.</li> </ol>
Equipment stops working without power off or any external control.	<ul style="list-style-type: none"> <li>■ The equipment is affected by strong noise.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check equipments with strong noises are installed near to the equipment and keep it far from them.</li> <li>2. Contact your local dealer to fix the equipment if the problems are not yet solved.</li> </ol>

## Temperature controlling

Symptoms	Causes	Solutions
Equipment does not work even though pressing START/STOP button.	<ul style="list-style-type: none"> <li>■ Wrong controller setting value input.</li> </ul>	<ol style="list-style-type: none"> <li>1. Input SV on the controller and press Start/Stop button for checking the operation</li> <li>2. Controller problem. Contact your local dealer to check the controller function.</li> </ol>
Temperature controlling failure.	<ul style="list-style-type: none"> <li>■ The equipment should be Auto Tuned.</li> </ul>	<ol style="list-style-type: none"> <li>1. Do 'Auto Tuning' and restart the equipment.</li> <li>2. Contact your local dealer to fix the equipment if the problems are not yet solved.</li> </ol>
Temperature does not increase.	<ul style="list-style-type: none"> <li>■ RUN LED is off.</li> <li>■ Door LED is off.</li> </ul>	<ol style="list-style-type: none"> <li>1. Check whether RUN LED is on and press Start/Stop button if it's off.</li> <li>2. Check the door LED condition and close the door correctly.</li> <li>3. Contact your local dealer to fix the equipment if the problems are not yet solved</li> </ol>



Symptoms	Causes	Solutions
Buzzer is ringing continually.	<ul style="list-style-type: none"><li>■ Wroing SV of Over temp. Limit</li><li>■ Door is opened.</li></ul>	<ol style="list-style-type: none"><li>1. Check if the SV of Over temp. Limit is set lower than present value.</li><li>2. Set the SV 20% higher than present value by turning the Over Temp. Limit</li><li>3. Check if the RUN LED is on after pressing Start/Stop button.</li><li>4. Cehck the condition of Door LED and close the door if its on. <i>If not solved;</i></li><li>5. Contact your local dealer to fix the equipment if the problems are not yet solved.</li></ol>



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## Chapter 8

# Specifications

Check the specifications of the ovens for proper operation.

Including;

- Specifications





## Specifications

Model		ON-01E	ON-11E	ON-21E
Chamber volume		52L	100L	150L
Permissible environmental condition		Temperature 5℃ to 40℃ Maximum relative humidity 80% Altitude up to 2,000m		
Temperature	Range	Amb. +15℃ to 220℃		
	Accuracy	±1℃ at 100℃		
	Uniformity	±4℃ at 100℃		
	Heat up time	100℃ Within 45 min		
	Controller	Digital PID auto tuning		
	Sensor	K-CA		
Material	Internal	Stainless steel, 0.6t		
	External	Steel, 1.2t, powder coating		
	Shelves	Stainless steel wire, electro polished		
	Insulation	Mineral wool (50mm)		
	Door gasket	High temperature grade foamed silicone rubber		
	Ventilation slide	Stainless steel, dia 38mm; 2EA		
Timer		Wait on time, Wait off time (Max. 99hr 59min, Min. 1min)		
Safety device		CLS(Custom Logical Safe) - Control system		
Over temp. limit		Hydraulic over temp. Limit		
Heater		Incoloy sheath 230VAC/1000W 120VAC/800W	Incoloy sheath 230VAC/1400W 120VAC/1000W	Incoloy sheath 230VAC/1700W 120VAC/1200W
Size (W <sub>i</sub> D <sub>i</sub> H)	Internal(mm)	375 <sub>i</sub> 370 <sub>i</sub> 370	455 <sub>i</sub> 430 <sub>i</sub> 510	585 <sub>i</sub> 460 <sub>i</sub> 555
	External(mm)	530 <sub>i</sub> 535 <sub>i</sub> 737	610 <sub>i</sub> 595 <sub>i</sub> 877	740 <sub>i</sub> 625 <sub>i</sub> 922
Electric requirement	230VAC 50/60Hz	4.3A	6.0A	7.3A
	120VAC 60Hz	6.7A	8.3A	10.0A
Weight(net)		34kg	46kg	58.5kg

※ The specs would be changed without notice for quality improvement of the equipment.



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## Chapter 9

# Warranty & Service

The equipment is covered by the warranty standard regulated by Jeio tech. Exceptions from the standards can't be covered by warranty.

Including;

- Warranty and Service
  - Warranty and service
  - Exceptions from warranty
  - Service request
  - Return process



## Under Warranty

### Warranty service

If trouble occurs during product use, User can get free service for one year from the date of purchase.

## Exception

### Exceptions from warranty

User can not be credited by warranty in case of as below.

1. If trouble occurs by an act of God.
2. If the equipment breaks down due to misusing of available voltage.
3. If damage occurs by dropping a product, or impact.
4. If damage occurs in an appearance by organic solvents such as thinner, benzene.
5. If damage occurs without following to notice in the manual
6. If damage occurs by fixing the equipment by any person who is not related with Jeio tech.
7. If damage occurs by a mistake of a customer

## Service

### Service request

1. Contact the local agent with claim form including the below conditions.

- \* Date of purchase
- \* Name/Address/Contact no./E-mail
- \* Serial Number
- \* Symptoms

## Returns

### Return process

Contact the local agent with claim form including the below conditions

- \* Date of purchase
- \* Name/Address/Contact no./E-mail
- \* Serial Number
- \* Symptoms
- \* Causes of returns
- \* Forwarder information



Service contact

## **Service contact**

### **Korea (Head office-Overseas department)**

4F Hosu B/D, 379-13, Seogyo-dong, Mapo-ku, Seoul,  
Republic of Korea. (121-839)

TEL: +82 - (0)2 - 3143 - 1823 / 1825

FAX: +82 - (0)2 - 3143 - 1824

<http://www.jeiotech.com>

E-mail: [overseas@jeiotech.com](mailto:overseas@jeiotech.com)

### **U.S.A.**

2400 East Devon Ave, Suite 2005, Des Plaines, IL 60018, USA

TEL: 1-847-298-6613

FAX: 1-847-699-8487

E-mail: [pjhwang@jeiotech.com](mailto:pjhwang@jeiotech.com)

### **China**

RM107, No. 68 Line, 569 Xin Hua Road, Shanghai, China

Postcode: 200052

TEL: 86-21-62940608

FAX: 86-21-62940602

E-mail: [wslee@jeiotech.com](mailto:wslee@jeiotech.com)

### **South East Asia**

No. 7A, Jalan Kemboja 1 B/2, 48300 Bandar Bukit

Beruntung, Selangor Darul Ehsan, Malaysia

TEL: 603-60285833, 603-60285825

FAX: 603-60285822

E-mail: [labcomp@streamyx.com](mailto:labcomp@streamyx.com)

### **England (UK)**

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