Lab Companion

Operation Manual

Multi-chamber

Forced Convection Ovens

Models: OF-02G-2C & OF-02G-4C

Manual No.: 1A015L002 Version : 0.0

JEIO TECH

Lab Companion

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1 Safety Advice

1.1 Operation Manual

This manual contains important safety and operation information. You must carefully read, understand, and follow all the instructions in this manual prior to operating this equipment. Keep this manual in a safe place nearby for reference and make it easily available to all users.

1.2 Danger/Caution/Notice Alerts

This manual highlights **Danger/Caution/Notice** alerts to prevent injuries or property damages and also to achieve optimum performance. Ensure to read the danger alerts and caution alerts in 1.3 and 1.4 carefully before use.

These alerts are classified into three types in this manual depending on the importance and the risk levels as described below:

Symbols	Meaning
⚠ DANGER	Ignoring this danger alert can cause serious injury or even fatal accident.
⚠ CAUTION	Ignoring this caution alert can cause injury or property damage.
NOTICE	Ignoring this notice can cause operational problems.

1.3 Danger Alerts

⚠ DANGER
Ignoring the following warnings could cause serious injuries or even fatal accidents.

◆ **Check the required electrical requirements on the ID plate of this equipment before use.**

- **Connect this equipment to a dedicated power outlet nearby.**
- **Make sure to connect this equipment only to properly grounded power outlets to protect you and your instrument. Do not ground to gas pipes or water pipes.**
- **Make sure to use the power cord supplied with this equipment. (250V/15A)**
- **Never install or use this equipment in explosive or flammable atmospheres.**
- **Never use or store flammable or hazardous substances near to this equipment.**
- **Never use the equipment to heat flammable, explosive or hazardous substances.**
- **Never expose this equipment to any heat sources including direct sunlight.**
- **Never allow water, organic solvents, dust, or corrosive gases to get inside the equipment**
- **Never put or insert any objects (especially if conductive or flammable) inside this equipment.**
- **If you observe a strange smoke, odor or noise from the instrument, unplug the power cord immediately and turn off the main power switch. After the smoke or odor disappears, contact your dealer or Jeio Tech if any repair is required.**
- **Never disassemble, repair, or modify this equipment on your own. Doing so will void your warranty and may result in injuries or product damages.**
- **Never move this equipment while under operation.**
- **Always wear proper protective gear (such as goggles, gloves, masks or an apron) when using this equipment.**

1.4 Caution Alerts

⚠ CAUTION
Ignoring the following cautions could cause injuries or property damages.

- **Do not place heavy objects, including this equipment, on top of the power cord and do not strip, scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard.**

- **Make sure to set up this equipment on a flat, stable, clean, non-slip, dry, and fireproof surface inside a lab with proper safety measures.**

- **Do not place any device which can be affected by the motor vibrations near this equipment.**

- **Do not touch the power outlet, power socket, or power cord with wet hands. And make sure to connect the power cord directly and firmly to the power outlet and power socket.**

- **Beware that mechanical shock or vibration can damage this equipment and pay extra attention while moving it. Damages caused by mechanical shock or vibration may result in injury or fire.**

- **Do not install this equipment near any device that generates high frequency noise such as high frequency welding machines, high frequency sewing machines, or SCR power controllers.**

- **Before cleaning, make sure to unplug the power cord to avoid electric shock or fire.**

- **Do not use chlorine bleach, ammonia-based cleaners, abrasives, ammonia, or metal scouring pads. Wipe with a soft damped cloth or a sponge soaked in water or diluted neutral detergent.**

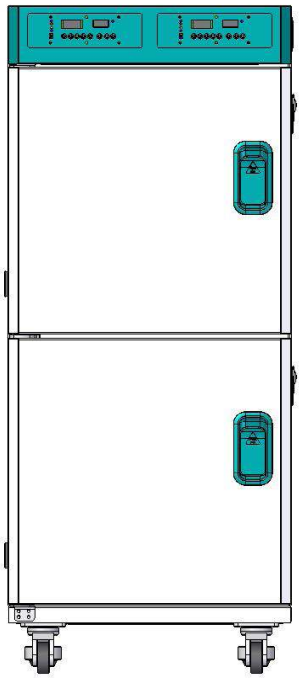
2 General Description

2.1 Product Introduction

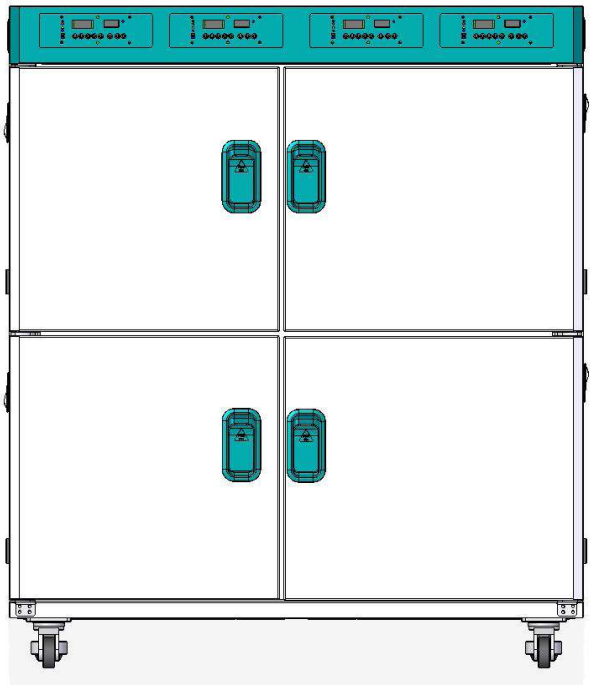
Merging two or four independently controlled 60L forced convection ovens into a single unit, these multi-chamber ovens with our patented control system offer ideal and cost-effective solutions for laboratories with limited space and budget.

Incorporating specially designed forced convection ovens (Model: OF-02G) featuring a powerful yet noiseless sirocco fan, these ovens guarantee intensive drying performance, especially for material with high moisture content.

Currently two models of multi-chamber forced convection oven are available: **OF-02G-2C** (with 2 chambers) and **OF-02G-4C** (with 4 chambers).



OF-02G-2C



OF-02G-4C

These multi-purpose ovens are suitable for the following applications essential for biology, chemistry, medicine, pharmacology, bioengineering, etc.:

- sample drying
- quick glassware drying
- sterilization
- preheating
- heat-resistance tests for electronic parts and building materials
- aging tests
- batch tests
- thermal denaturation experiments
- thermosetting experiments
- shelf life tests for food and beverage

2.2 Key Features

◆ **Safety Features**

(1) automatic shut-off of fans and blowers when doors are opened to protect users against hot air
(2) open door alarm
(3) easy to open and close door lock
(4) over-temperature protection
(5) threefold tempered glass window providing clear inside view of the chambers (optional)

◆ **Operational Features**

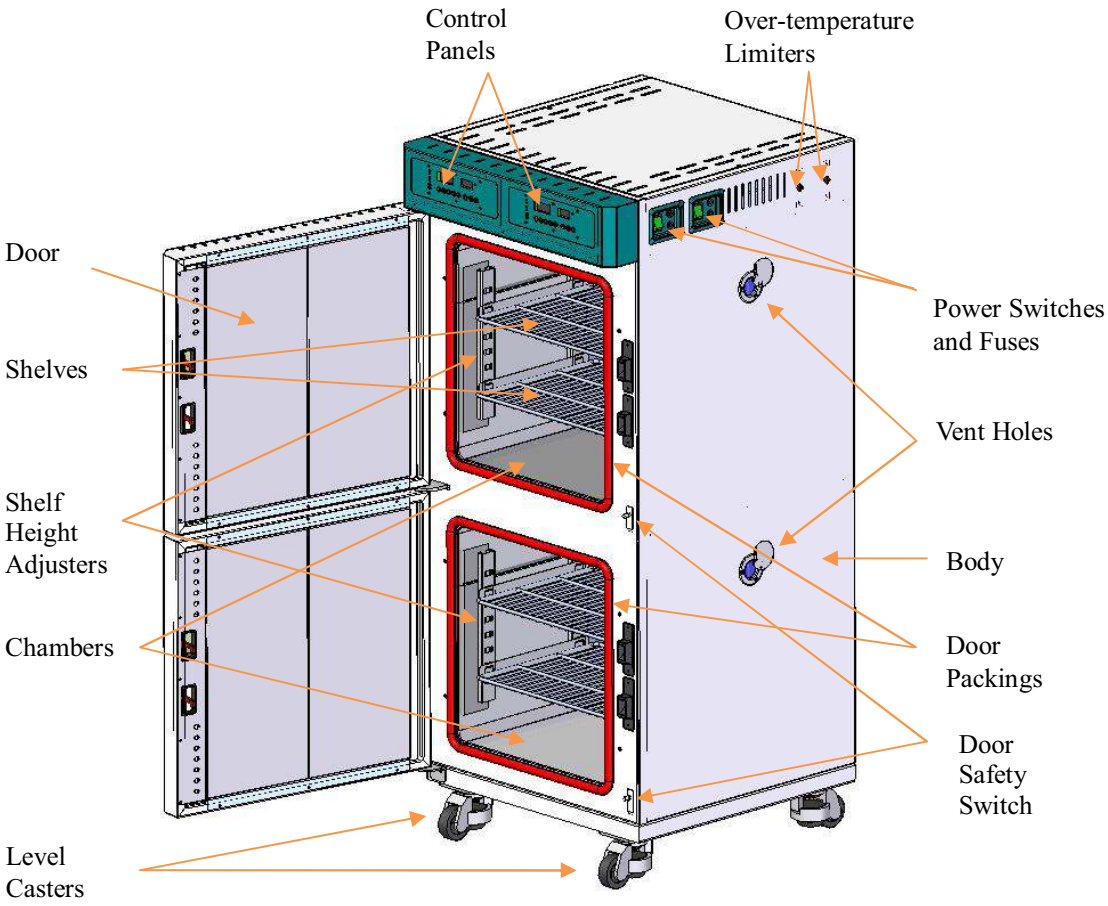
(1) independent temperature and timer control of each oven using microprocessor PID
(2) temperature range: ambient + 10℃ to 220℃
(3) digital delayed On/Off timer: 1 min to 99 hr 59 min range
(4) three most commonly used temperature settings programmable
(5) easy-to-read digital LED display
(6) touch-sensitive keypad
(7) RS-232 interface

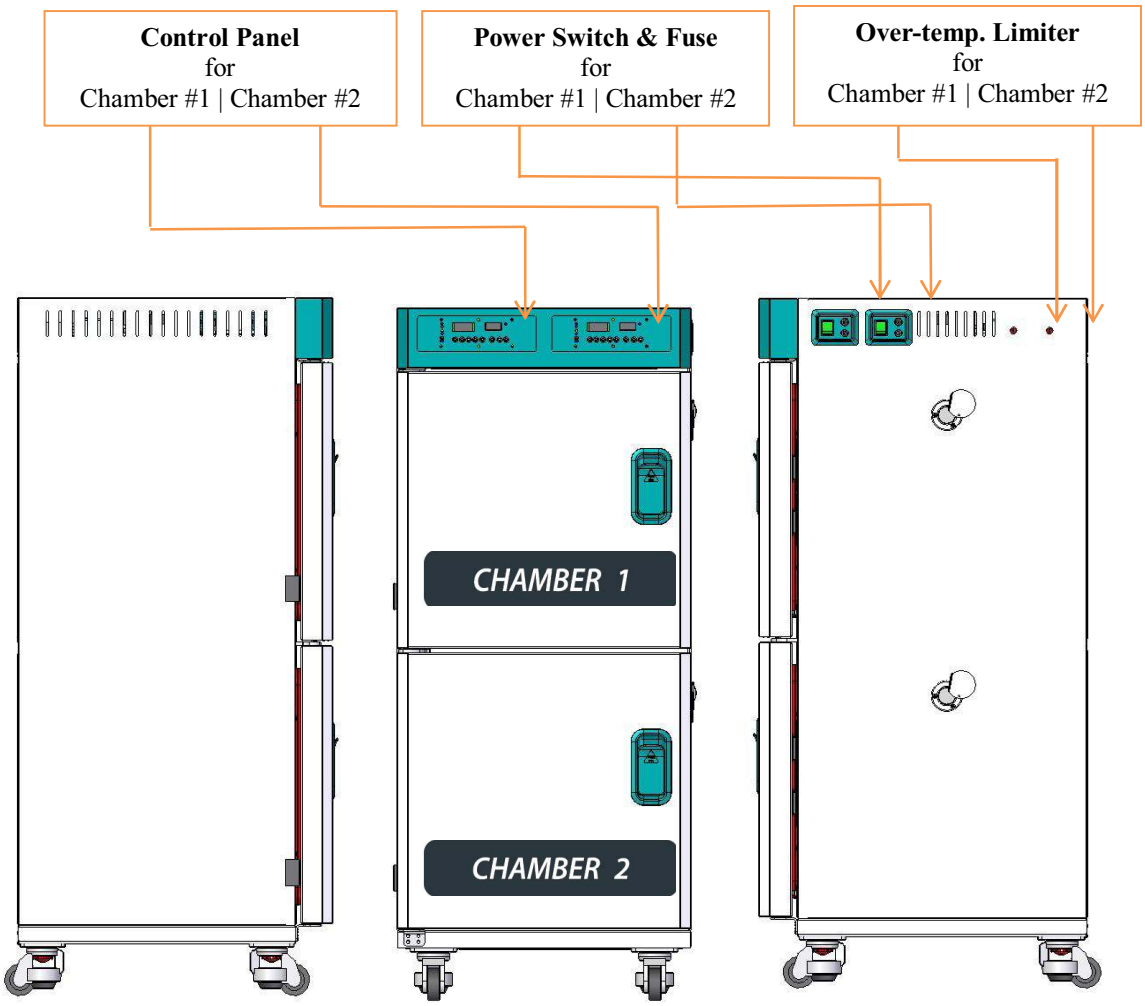
◆ Constructional Features

(1) two or four independently controlled 60L ovens merged into a single unit for space saving
(2) quiet but strong air flow generated by a powerful sirocco fan ensuring optimal air circulation, temperature uniformity, and short heat-up time
(3) superb insulation and minimum heat loss thanks to high-quality insulation material inside the chamber wall and special silicone door packings
(4) rounded inner chamber corners for easy cleaning and uniform air flow
(5) corrosion-resistant incoloy sheath heater and stainless steel interior
(6) adjustable vent holes to control inner vapor circulation
(7) built-in high-quality casters for easy transport and installation

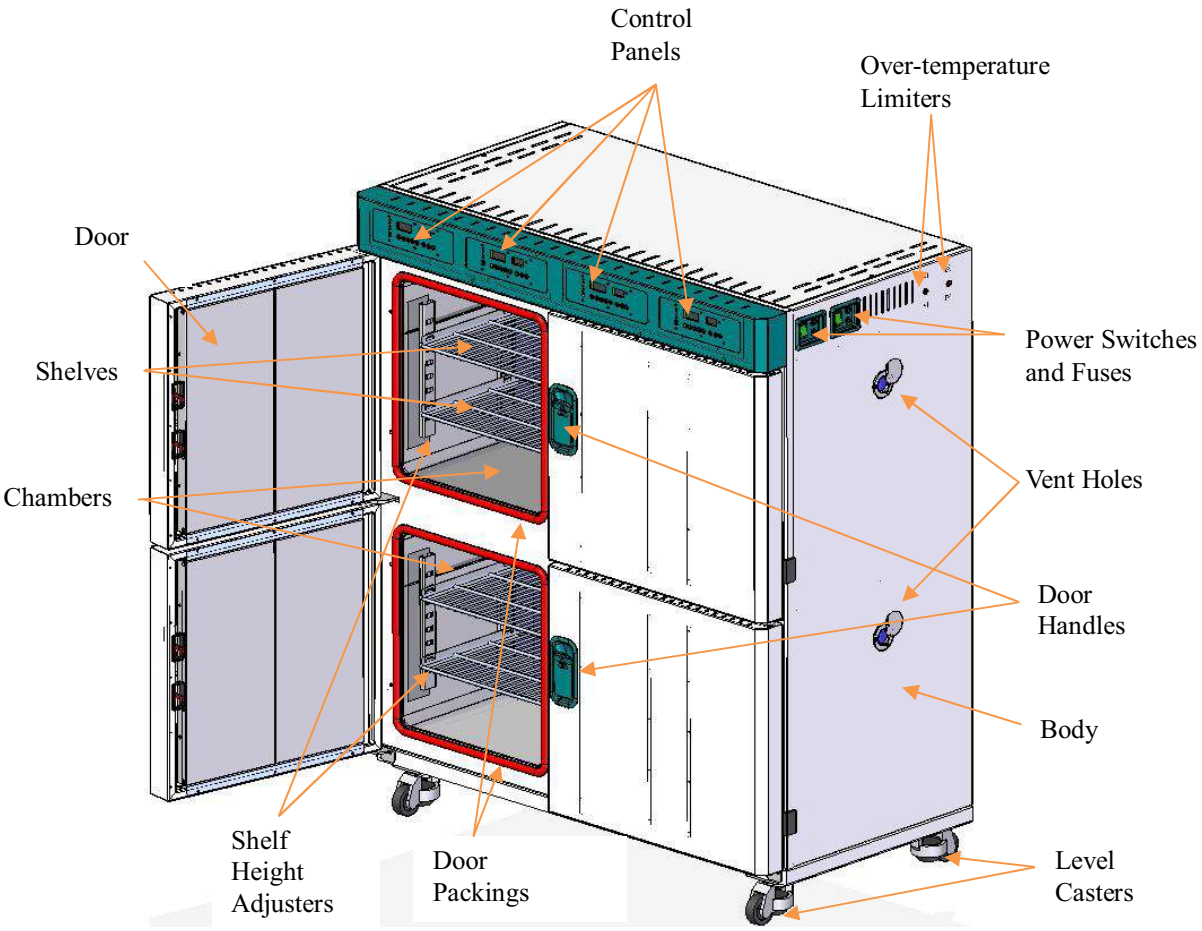
2.3 Construction

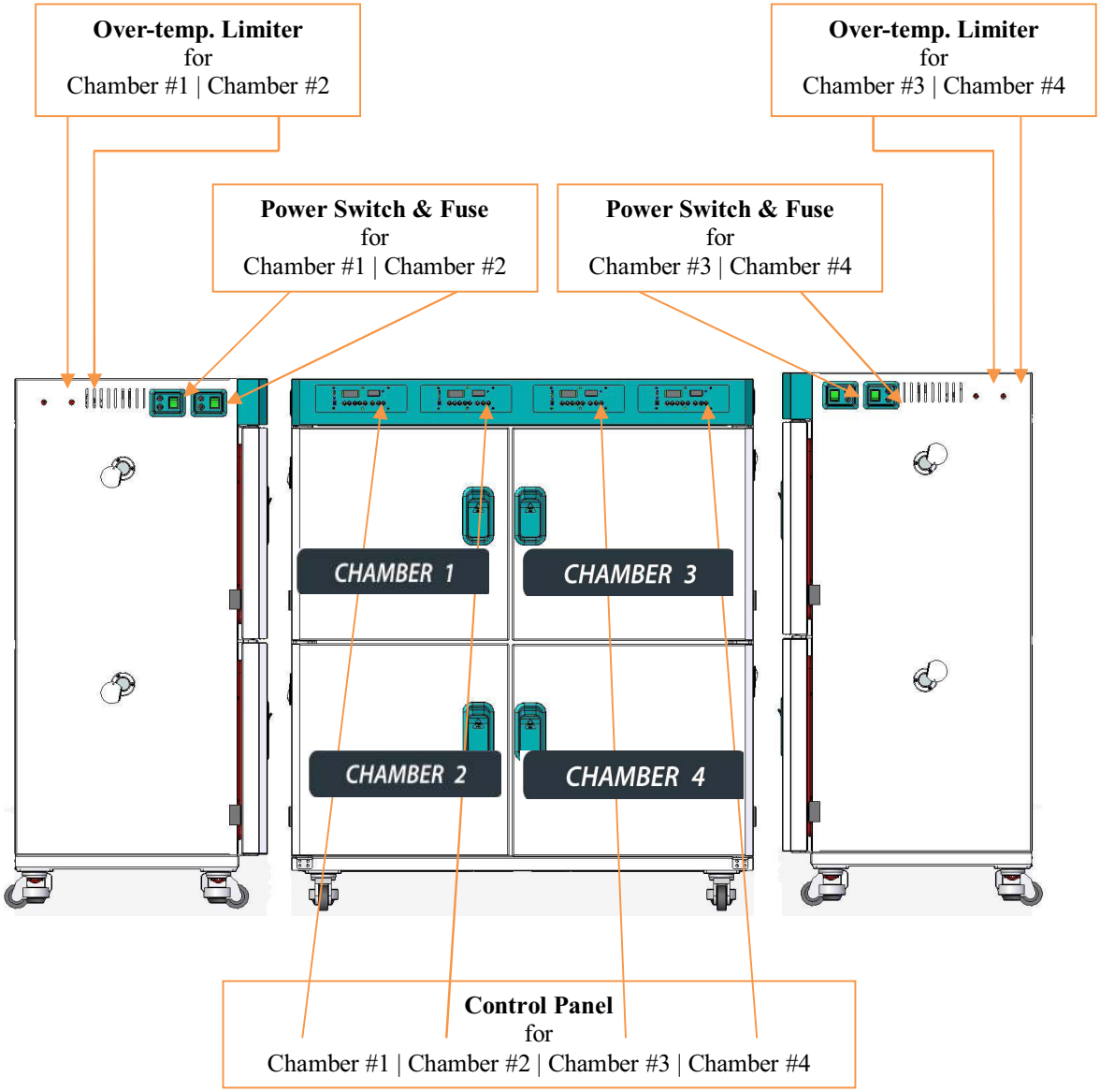
[OF-02G-2C Model]




Control Panel
for
Chamber #1 | Chamber #2
Power Switch & Fuse
for
Chamber #1 | Chamber #2
Over-temp. Limiter
for
Chamber #1 | Chamber #2
CHAMBER 1
CHAMBER 2

[OF-02G-4C Model]




Over-temp. Limiter
for
Chamber #1 | Chamber #2
Over-temp. Limiter
for
Chamber #3 | Chamber #4
Power Switch & Fuse
for
Chamber #1 | Chamber #2
Power Switch & Fuse
for
Chamber #3 | Chamber #4
CHAMBER 1
CHAMBER 3
CHAMBER 2
CHAMBER 4
Control Panel
for
Chamber #1 | Chamber #2 | Chamber #3 | Chamber #4

3 Unpacking and Installation

3.1 Checking Shipment Damage and Unpacking

Upon receiving the instrument, check to ensure that no damage has occurred during shipment. It is important that any damage that occurred during shipment must be detected before unpacking. If you find such damage, notify the carrier immediately.

3.2 Checking the Contents of the Package

After unpacking, check to ensure that all the following items are included in the package. If not, contact your dealer or Jeio Tech immediately.

Item		Quantity
Main Body		1
Operation Manual		1
Shelves	OF-02G-2C	4
	OF-02G-4C	8
Shelf level adjuster	OF-02G-2C	8
	OF-02G-4C	16
Fuses	OF-02G-2C	2
	OF-02G-4C	4

3.3 Installation

3.3.1 Operating Conditions

This equipment is designed for indoor use in laboratory environments and to be operated only by properly trained staff knowledgeable in safe laboratory practices.

The operating conditions for this equipment are as follows:

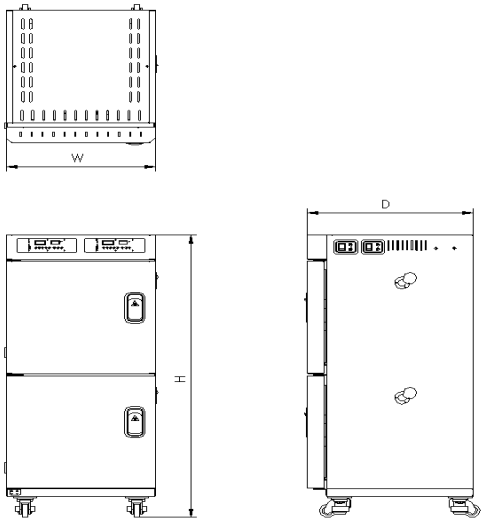
Permissible Ambient temperature	5 to 40℃ (41 to 104°F)
Permissible Relative humidity	10 to 80%
Permissible Altitude	0 to 2,000 m (6,562 ft)

3.3.2 Weight Consideration

This equipment is quite heavy: 110 kg (OF-02G-2C) or 170 kg (OF-02G-4C). Therefore, it is highly recommended to use a proper tool such as a pallet jack when lifting it.

3.3.3 Space Requirements

Before moving and installing the unit, check the dimensions of the equipment described below as well as the desired place of installation carefully. In addition, check the dimensions of the pathway and make sure that there is nothing obstructing the movement along the way.



		OF-02G-2C	OF-02G-4C
Size (W×D×H)	Internal (㎜)	400×360×420	400×360×420
	External (㎜)	570×640×1360	1170×640×1360

Note also that minimum 1.2 m (4 feet) free space in front of the equipment is needed to open the chamber doors completely.

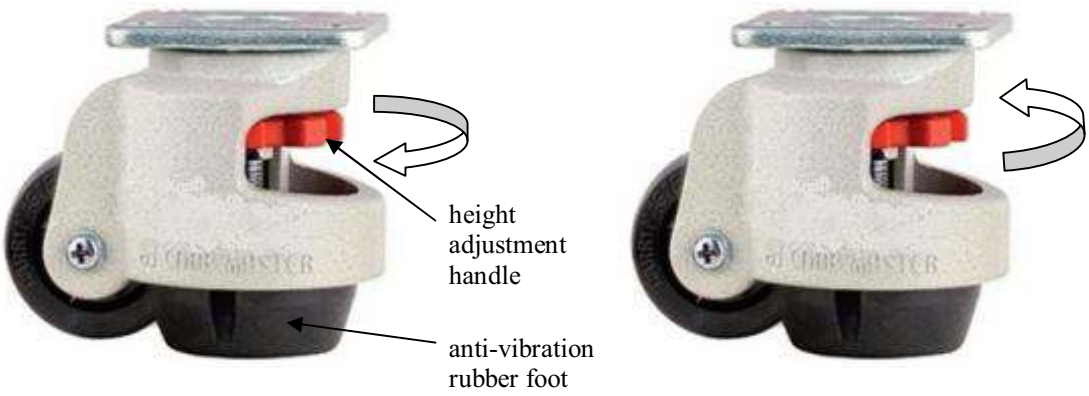
3.3.4 Where to install

⚠ DANGER

- Never install or use this equipment in explosive atmospheres.
- Never install or use this equipment with or near to hazardous or flammable substances.
- Never expose this equipment to any heat sources including direct sunlight.
- Never install this equipment closer than 30 cm (12 inches) to a wall.
- Never install this equipment near any device that generates high frequency noises.
- Install this equipment on a flat, stable, clean, non-slip, dry, and fireproof surface inside a lab with proper safety measures.
- Observe the minimum distances (in general, 30 cm or 12 inches) from other devices. In addition, any device which can be affected by the motor vibrations should not be placed near this equipment.

3.3.5 Moving and Leveling

This equipment is equipped with four high-quality level casters shown below which combines three mounting requirements into one: leveling adjustment, caster mobility, and vibration control.



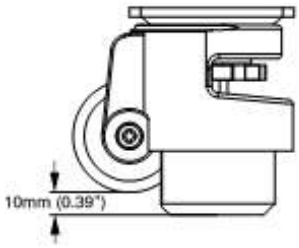
To move the unit, turn the height adjustment handles to raise the anti-vibration rubber feet. If the adjustment handle is too tight to turn due to heavy load, use a wrench to turn the nut under the handle instead.

After moving the equipment to the installation site, use the adjustment handles to level the unit and also to lock the rubber feet in place. The leveling procedures are as follows:

1) Place the equipment to the desired location.

2) Turn all 4 height adjustment handles counter-clockwise until the rubber feet touch the ground.

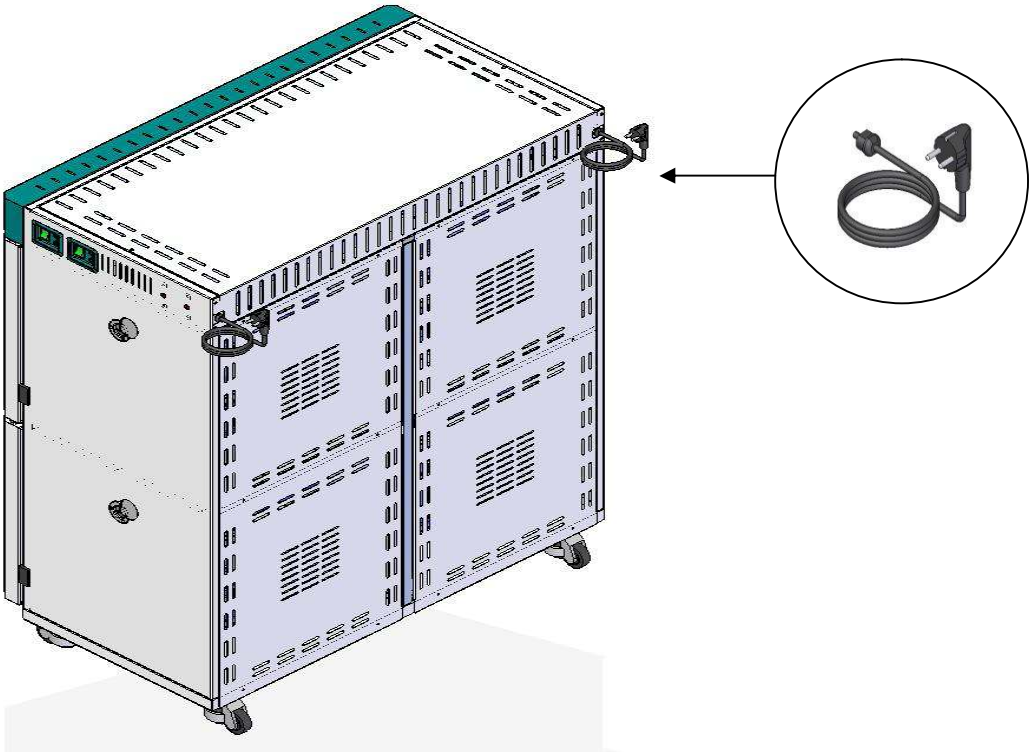
3) Then, turn all 4 height adjustment handles about 90° degree more so that the caster is about 10 mm(0.39") above the ground as shown below:



4) Check whether the equipment is level side-to-side as well as front-to-back by placing a bubble level on top of the equipment.

5) If not, adjust the height of the rubber foot appropriately until the equipment is level.

3.3.6 Power Connection



When connecting power, use only the power cord that came with your equipment. The power connection procedures are as follows:

1) Before connecting the power cord, make sure that all main power switches are turned off.

2) Plug the power cords into the power sockets at the back of this equipment as shown above.

3) Plug the other end into a properly grounded and dedicated power outlet nearby.

⚠ DANGER

- Check electrical requirements in the operation manual or on the ID plate attached to the top of this equipment before use.
- Make sure to connect this equipment only to properly grounded as well as dedicated power outlets to protect you and your equipment.
- Make sure to use the power cord supplied with this equipment.
- In order to prevent fire or power cord damage due to overloading, do not use power strips or improper extension cords.

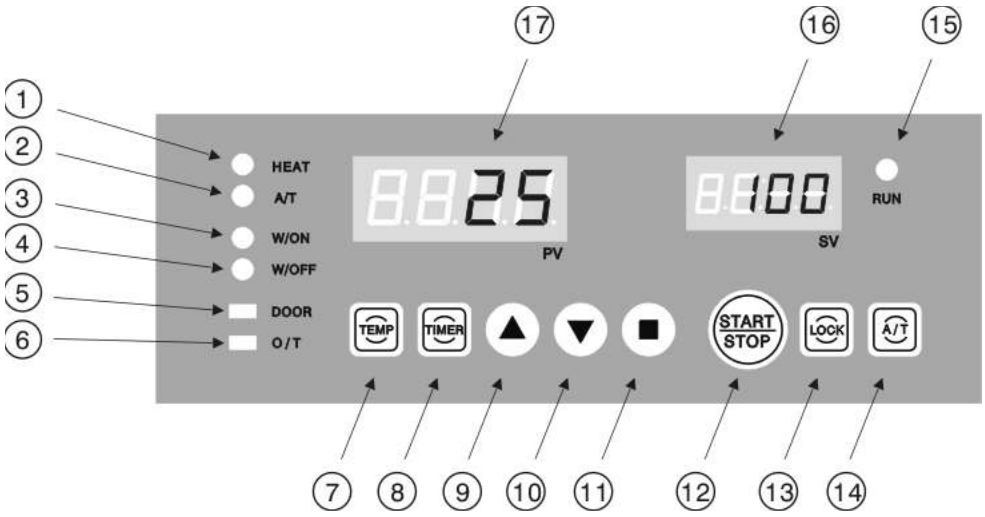
3.3.7 Required Cheking Prior To Operation

⚠ DANGER

- Check whether any flammable, explosive or hazardous substances are inside the equipment.
- Check whether the equipment is level and fixed properly by the rubber feet.
- Check whether all the power cords are firmly connected.

4 Operation

4.1 Control Panel



(1) Heater LED
(2) Auto Tuning LED
(3) Wait On Timer LED
(4) Wait Off Timer LED
(5) Open Door Warning LED
(6) Over-temperature Warning LED
(7) Temperature Button
(8) Timer Button
(9) Up Button
(10) Down Button
(11) Enter Button
(12) Start/Stop Button
(13) Lock Button
(14) Auto Tuning Button
(15) Run LED
(16) SV (Set Value) Display
(17) PV (Present Value) Display

(1) **Heater LED** illuminates when the heater is activated.

(2) **Auto Tuning LED** blinks when the auto-tuning is performed.

(3) **Wait On Timer LED** blinks while the wait on timer is activated and illuminates when waiting for the wait on timer activation.

(4) **Wait Off Timer LED** blinks while the wait off timer is activated and illuminates when waiting for the wait off timer activation

(5) **Open Door Warning LED** blinks together with buzzer sound when the door is opened for more than one minute**.** In such cases, note that the heater and the blower is automatically deactivated. If the door is closed, the heater and the blower are activated again.

(6) **Over-temperature Warning LED** blinks together with buzzer sound when the chamber temperature is exceeding the limit set by the over-temperature limiter. In such cases, the equipment is automatically deactivated. Before operating the equipment again, check the reason for overheating and take proper measures..

(7) **Temperature Button** is used for temperature settings.

(8) **Timer Button** is used for timer settings

(9) **Up Button** is used to increase the setting values. (To raise the value rapidly, keep pressing the **Up Button**.)

(10) **Down Button** is used to decrease the setting values. (To lower the value rapidly, keep pressing the **Down Button**.)

(11) **Enter Button** is used to save the setting values.

(12) **Start/Stop Button** is used to start or stop the equipment. In addition, this button is also used to reactivate the equipment after it is deactivated by the control system as described in (after it is deactivated by the control system as described in (5) or (6).

(13) **Lock Button** is used to deactivate all other buttons for preventing inadvertent or

accidental changes during operation. The locking function starts and stops with beep sound when pressing the **LOCK Button** for more than one second.

(14) **Auto Tuning Button** is used to perform auto tuning function. The auto tuning function starts when pressing the **Auto Tuning Button** for more than one second.

(15) **Run LED** illuminates when the equipment is operating.

(16) **SV Display** shows the set temperature (set value).

(17) **PV Display** shows the current temperature (present value) or the remaining time of the timer.

4.2 Temperature-related Functions

Six kinds of temperature-related functions can be selected by pressing the **Temperature Button** a certain times in succession as described below:

PV Display	# of Push	Function
SUB	1 time	Normal temperature setting
SU.1	2 times	Storing SV1 temperature setting
SU.2	3 times	Storing SV2 temperature setting
SU.3	4 times	Storing SV3 temperature setting
UNIT	5 times	Temperature unit conversion ($^{O}C \leftrightarrow {}^{O}F$)
bIAS	6 times	Temperature calibration

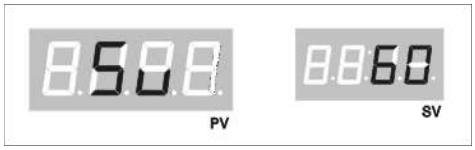
NOTICE

- These temperature-related functions are automatically cancelled if no action is taken for more than 10 seconds.

4.2.1 Normal Temperature Setting

The normal temperature setting procedures are as follows:

1) Press the **Temperature Button** once and check whether the **PV Display** shows SV and the **SV Display** blinks.



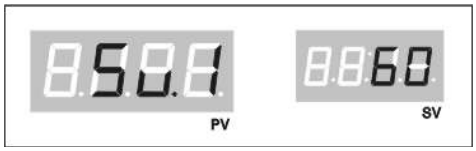
2) Select the desired temperature by using the **Up** or **Down Buttons**.

3) When the desired temperature is selected, press the **Enter Button** to save it.

4.2.2 Storing Frequently Used Temperature Settings: SV1, SV2, and SV3

Up to three frequently used temperature settings (SV1, SV2, and SV3) can be stored and retrieved when needed. The storing procedures are as follows:

1) Press the **Temperature Button** twice in succession for storing the first temperature setting (SV1) and check whether the **PV Display** shows SV1 and the **SV Display** blinks:



2) Select the desired temperature setting by using the **Up** or **Down Buttons**.

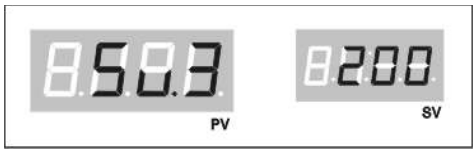
3) When the desired temperature is selected, press the **Enter Button** to save SV1.

4) Press the **Temperature Button** once again (total 3 times) for storing the second temperature setting (SV2) and check whether the **PV Display** shows SV2 and the **SV Display** blinks.

5) Select the desired temperature setting by using the **Up** or **Down Buttons**.

6) When the desired temperature is selected, press the **Enter Button** to save SV2.

7) Press the **Temperature Button** once again (total 4 times) for storing the third temperature setting (SV3) and check whether the **PV Display** shows SV3 and the **SV Display** blinks.



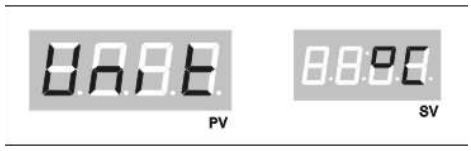
8) Select the desired temperature setting by using the **Up** or **Down Buttons**.

9) When the desired temperature is selected, press the **Enter Button** to save SV3.

4.2.3 Temperature Unit Conversion

Note that the default temperature unit is Celsius. However, you can change the temperature unit from Celsius to Fahrenheit, or vice versa. The temperature unit conversion procedures are as follows:

1) Press the **Temperature Button** five times in succession and check the current temperature unit setting:



2) If you want to change the unit from Celsius to Fahrenheit (or vice versa), use **Up** or **Down Buttons** to select the desired unit.

3) When the desired temperature unit is selected, press the **Enter Button** to save it.

4.2.4 Temperature Calibration (Offsetting)

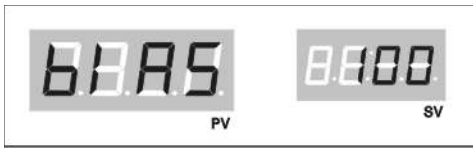
The displayed temperature of this equipment can be different from the temperature measured by your own thermometer which you want to use as standards. In such cases, you can offset such temperature differences as follows:

1) Turn the power switch on and wait until the start-up display appears.

2) Place your own thermometer which can be monitored remotely inside the chamber and close the door.

3) Compare the thermometer reading to that shown on the PV display.

4) If there is a difference, press the **Temperature Button** six times in succession and check whether display similar to the following appears:



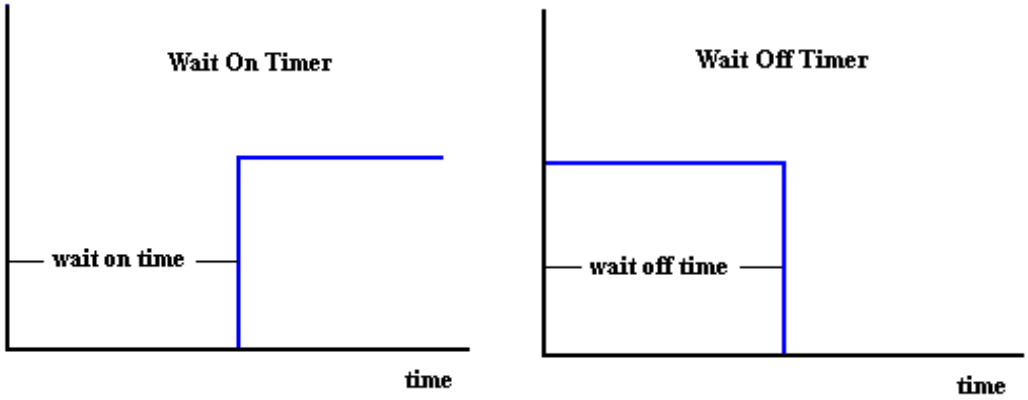
5) Select the desired offsetting value by using the **Up** or **Down Buttons**.

6) When the desired offsetting value is selected, press the **Enter Button** to save it.

4.3 Timer Setting

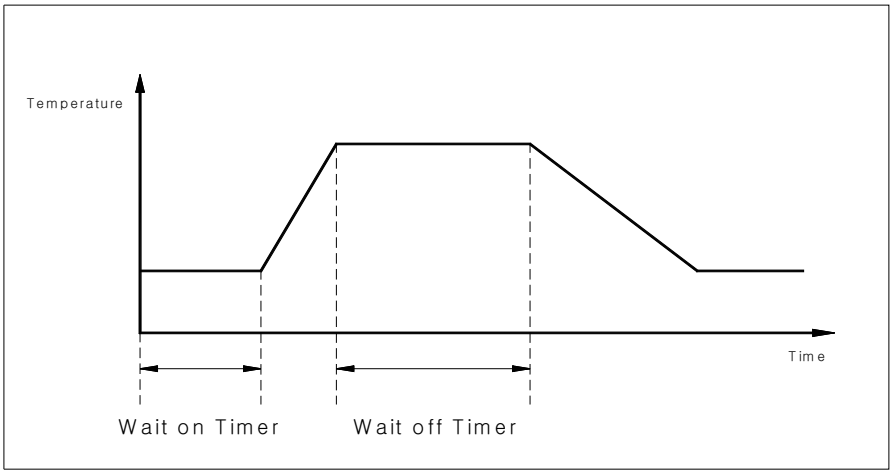
This equipment provides two types of timer mode:

- **Wait (Delayed) On Timer Mode** and
- **Wait (Delayed) Off Timer Mode**.



In case of the **Wait On Timer Mode**, the desired operation is activated when the set wait on time is elapsed as shown above. In case of the **Wait Off Timer Mode,** on the other hand, the desired operation is activated when **PV** (present value, e.g., actual temperature) reaches the **SV** (set value, e.g., set temperature) and deactivated when the set wait off time is elapsed.

While the diagrams shown above illustrate the situations when these two timer modes are used independently, the following one depicts a case when the two modes are combined:

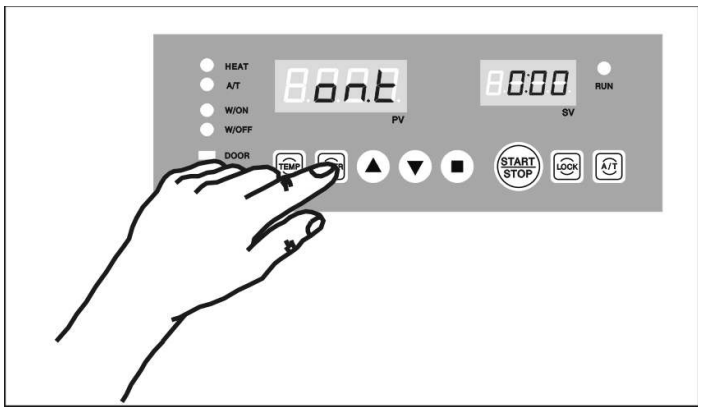


Note that these **Wait On/Off Timers** are a productivity tool and also a safety device because it allows you to preset the start up time and also the shut down time for unattended operation.

The timer setting procedures are as follows:

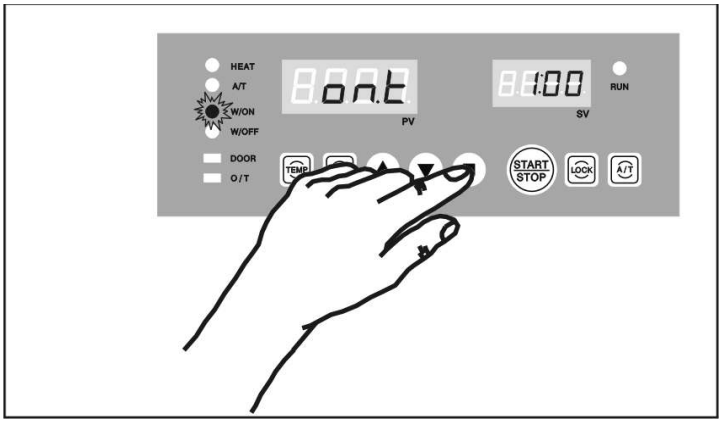
1) Press the **Timer Button** once for **Wait On Timer Mode** [**on.t**] or twice for **Wait Off Timer Mode** [**off.t**] and check whether proper timer mode (either [**on.t**] or [**off.t**]) and

the current set time are displayed as shown below:



2) If you want to change the timer setting, select the desired timer value by using **Arrow Buttons**.

3) Save the desired timer value by pressing the **Enter Button** and check whether the **W/ON** LED or **W/OFF** LED is turned on with beep sounds as shown below:



NOTICE

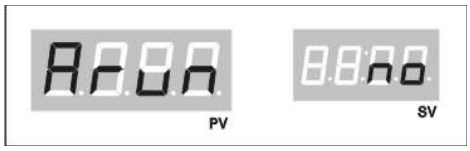
- The allowed timer range is between 1 minute and 99 hour 59 minutes.
- These timers do not function during the auto-tuning process.

4.4 Auto Run Function

Auto Run function allows the equipment to automatically resume the operation when the power is restored after a power cutoff caused either by a blackout or by an operational mistake.

The Auto Run selection procedures are as follows:

1) Press the Timer Button three times and check whether the following display appears:



2) Select either 'Yes' or 'No' by using ARROW Keys.

3) When selected, press the ENTER Button to save it.

4.5 Auto-tuning (PID Parameter Calibration)

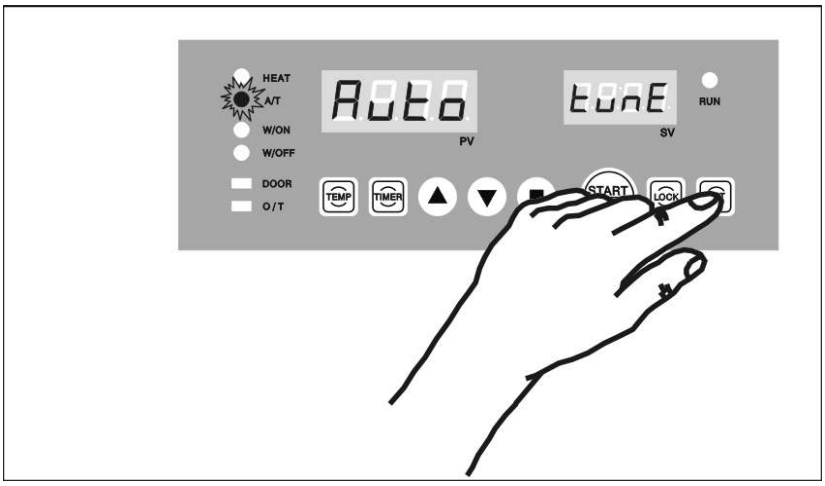
Auto-tuning function allows the equipment to reach the desired setting (such as temperature or humidity) in the quickest way by automatically adjusting the PID parameters.

For this reason, periodic auto-tuning is recommended especially when physical properties of the operating environments or the physical characteristics of the samples are changed.

Auto-tuning procedures are as follows:

1) Set the desired temperature.

2) Press the **Auto-Tuning Button** for more than a second and check whether the auto-tuning process is activated. Note that, when activated, '**Auto tune**' display shown below appears and the **A/T LED** starts to blink:



3) Wait until auto-tuning process is finished with the **A/T LED** turned off. When finished, the equipment will be controlled by the newly tuned PID parameters.

NOTICE

- Note that the time required for auto-tuning is usually 40 to 60 minutes but can vary depending on the operating environments.

4.6 LOCK Button

Locking function is provided to prevent inadvertent or accidental operational mistakes.

You can activate the locking function by pressing the **LOCK Button** for about three seconds.

When locked, note that all other buttons are deactivated.

To cancel the locking function, press the **LOCK Button** for about three seconds.

5 Maintenance

5.1 Cleaning

⚠WARNING

- Never immerse this unit in water or any other liquid.
- Do not allow any liquid or wet material to get inside the unit when cleaning.
- Do not reconnect this unit to power outlets until all cleaned surfaces have dried.

⚠CAUTION

- Do not use chlorine bleach, ammonia-based cleaners, abrasives, ammonia, or metal scouring pads when cleaning.
- During cleaning and general operation take care not to scratch the surface of the ceramic-coated top plate as this could result in subsequent thermal breakage.

Always make sure to keep top plate, main body, and accessories clean. Dirt and other foreign substances can cause fire or electric shock. Before attempting cleaning,

(1) disconnect the power cord from the power outlet and ensure that the equipment is cool enough,
(2) wipe with a soft dry cloth first to remove any foreign matter and, if not enough,
(3) wipe with a soft damp cloth or a sponge soaked in water or diluted neutral detergent when necessary.

Note that cleaning is made much easier if spills are attended to promptly.

5.2 Relocation

If you need to move the equipment to another place,

(1) disconnect the power cord from the power outlet,

(2) pack the equipment and its accessories into the original packaging or any other suitable container before moving

⚠ CAUTION
Pay attention to avoid mechanical shock or vibration while moving the instrument. Damages caused by mechanical shock or vibration may result in injury or fire.

5.3 Storage

If you know you will not use this equipment for an extended period of time,

(1) disconnect the power cord from the power outlet and
(2) clean the equipment with soft cloth.
(3) pack the equipment properly and make sure to store it in dry place.

6 Troubleshooting

6.1 Power Troubles

Problem	Cause	Corrective Action
The unit does not turn on.	• Connecting incorrect eletric outlet. • Damaged Power, Outlet or circuit breaker • Connecting over load concent • Circuit braker shuits down or black out.	1. Check correct power and voltage of the ID plate sticking on the back side of the unit. 2. Find out the causes of power failure anf recovery. 3. Insert the main Power plug correctly 4. Use a separate outlet to supply the power. 5. Repair cased black out. 6. If the problems do not solve, request the service.
Circuit breaker is often shorted	• The fuses do not fit the main power. • The main power might be cut or a parted • Humidity might inflow into the main power inserting part.	1. Check voltage and Ampere of fuses. 2. If main power is cut of aparted, exchange it. 3. If there is humidity on the inserting part, clear it and reconnect. 4. If the problems do not solve, request the service.
Circuit bresker is often shorted	• Too many plugs connect at the same time	1. Check voltage supplied by circuit breaker. 2. Check that several similar units are inserted together, If so you should not use overly. 3. If the problems do not solve, requst the service

Main switch lights on but display does not show	• Main plug does not insert correctly. • The lamp of the main switch does not light on. • Controller trouble.	1. Check there might be blackout. 2. Main plug connects with socket correctly 3. If the lamp of main switch does not light on, it may be poor switch Please replace main switch. 4. If the problems do not solve, request the service.
Whole controlling of the unit stops without cutting main power or any buttons.	• Might be influenced a strong noise.	1. Aboid from the unit producing a strong noise or put away that. 2. If the problems do not solve, request the service.

6.2 Temperature Troubles

Problem	Cause	Corrective Action
The Unit Does not operate while pressing START/STOP button.	• While operating timer function	1. Press Timer button. And then , Press Enter button after make 0(Zero) in wait on Timer, Wait off Timer function. 2. Request the service to replace the controller.
Temperature does not controll.	• Auto Tune does not operate.	1. Press Auto tune to restart the unit 2. If the ploblems do not solve, request the service
Temperature does not increse.	• Run LED does not light on. • Door LED is illuminating.	1. Check the Run LED for lighting on. If Run LED does not light on, Press START/STOP button. 2. Check the door LED 3. Close the door completely. 4. If the problems do not solve, request the service.
The beep sound rings.	• Trouble of the set value of over temp limit. • The door opens.	1. The set value of over temp limit is less than present st value. 2. Turn the red Konb of over temp.

		limit until over temp limit 15% higher than the present set value. 3. Check that RUN LED lights on after pressing START/STOP button. 4. Check the DOOR LED. If the LED lights on, close the door completely. 5. If the problems do not solve, request the service.

7 Accessories

Cat. No.	Description
EDA8136	Wire Shelves
AAA12531	Perforated Shelves

8 Appendix

8.1 Technical Specifications

Item/Model		OF-02G-2C	OF-02G-4C
Chamber volume		60L x 2 room	60L x 4 room
Temperature	Range	Amb.+10℃ ~ 200℃	
	Fluctuation	±0.5℃ at 100℃	
	Variation	±1℃ at 100℃	
	Controller	Digital PID auto-tuning	
	Sensor	K-CA	
	Heat up time	100℃ within 15 minutes	
Material	Internal	Stainless steel, 0.8t	
	External	Steel, 0.8t power 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×1EA	
Safety device		CLS(Custom Logical Safe)-control system, ClassⅡ	
Over-temperature limiter		Hydraulic Over-temperature limiter	
Heater		Incoloy sheath 1000W x 2ea(230V)	Incoloy sheath 1000W x 4ea(230V)
Size (W×D×H)	Internal (㎜)	400×360×420	400×360×420
	External (㎜)	570×640×1360	1170×640×1360
Weight (net)		110kg	170kg
Electrical requirements (230V 50/60Hz)		8.8A	17.6A (Main cord 8.8A x 2ea)

※ Unless otherwise specified, the above-mentioned data represent values at 25℃ and 60% relative humidity.

※ Permissible environmental conditions: 5 to 40℃ temperature, maximum 80% relative humidity

※ Jeio Tech reserves the right to make changes in design and specification without prior notice.

8.2 Equipment Disposal

Disposing of this equipment must be done in an environmentally responsible way if it has been potentially exposed to bio-agents or radioactive samples. Failure to follow stringent requirements for equipment disposal may lead to actions against you and your organization.

(1) First, check with your laboratory or organization to ensure that you are following all the policies and procedures for disposal of laboratory equipments.

(2) If not possible, contact your local governing body for regulations regarding disposal of laboratory equipments. Jeio Tech highly recommends you to find a local service provider that can properly dispose of your instrument.

8.3 Warranty and Disclaimer

Jeio Tech warrants to the original consumer that the products it manufactures will be free of defects and perform as specified for a period of two year from the purchase date if the equipment was used according to the instructions in this operation manual and only with accessories or consumable parts approved by Jeio Tech.

Any of Jeio Tech's products which, under normal operating conditions, proves defective in material or in workmanship, within two year from the purchase date will be repaired or replaced free of charge.

Our warranty excludes accessories or consumable parts and does not apply to faults resulting from abuse, misuse, alteration, insufficient care, maintenance contrary to the instructions in this operation manual.

Warranty claims can be processed faster if the instrument's serial number, detailed description of the problem, and its operating conditions are provided. Consumers will be required to submit the original receipt as proof of purchase date to support a warranty claim.

JEIO TECH HEREBY DISCLAIMS ALL OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

CUSTOMER'S SOLE REMEDY FOR ANY DEFECTIVE PRODUCT WILL BE AS STATED ABOVE, AND IN NO EVENT WILL JEIO TECH BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES IN CONNECTION WITH THE PRODUCT.

8.4 After-sales Service and Customer Assistance

Our after-sales service responds to your questions concerning maintenance and repair of this equipment as well as spare parts. In case of a warranty claim, repair or purchase of replacement parts or in case of queries or other problems, please contact your local dealer or Jeio Tech representative.

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