

# Operating Manual

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## Gravity Air Incubator

iG5

iG10

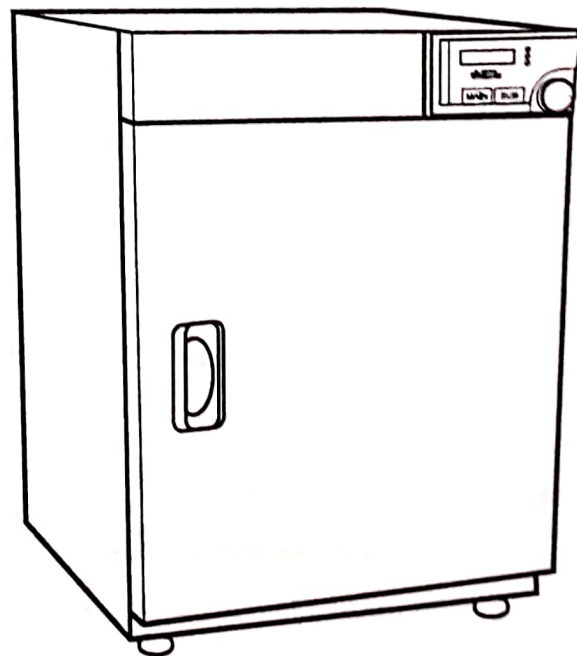
iG15

## Forced Air Incubator

iF5

✓ iF10

iF15



Thank you for purchasing Incubator of DAIHAN Biomedical Co., Ltd.

DAIHAN Biomedical Co., Ltd. has been studying high technology and does the efforts to supply the best products, which have the highest specification and confidence, to our customer. This product provides models of optimized performance for capacity of chamber, function of heater, and air circulation method. The heating unit installed at 3 sides of chamber directly heats the chamber maximizing heat conductivity and provides precision and uniformity for high temperature in chamber. In addition, it was designed by adopting electrical and instrumental safety devices to realize the use safety. We do our best to supply the products of the best quality to our customer's laboratory for many years to come.

### Operating Manual

- As this explanatory leaflet plays an important role to establish the product and use it, it is carefully read and it should be placed around the equipment.
- Read and understand all the instructions in the user manual before using the products.
- In any case, we don't bear responsibility for the damage of product which occurs by no observance for the requirements of user manual.
- The contents of user manual may be changed or improved.
- All relevant standards and regulations which are referred in the user manual are the valid version when preparing the user manual.
- Use only for the intended purpose which is described in the user manual.

### Copyright

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## 1. Warning and precautions

### 1. Warning and precautions

#### Safety symbol used in the manual

	<b>Danger</b> If the product is mishandled while ignoring this symbol, the danger by which human beings are dead or severely injured may occur.
	<b>Explosion hazard</b> If volatile and explosive chemical materials are used, the explosion may occur.
	<b>Notice</b> If the user arbitrarily dismantles or transforms the product, the fatal damage of the product may be induced.
	<b>warning</b> If the product is mishandled while ignoring this symbol, the danger by which human beings are dead or severely injured may occur.
	<b>Caution</b> If the product is mishandled while ignoring this symbol, the possibility in which human beings are injured or property damage occurs exists.
	Be careful to maintain the horizontality of the product and not to fall to the ground.
	Keep the product out of the direct rays of the sun.

	Be careful for electrical shock. The inappropriate power connection induces the damage of product or the injury of the human body.
	<b>High temperature</b> Be careful not to use at high temperature.
	<b>Approach prohibition</b> Prohibit the user from approaching to this area.
	<b>Contact prohibition</b> Prohibit the contact at the moment that leads to the accident.
	Observe the safety rules.
	Earth
	OFF position of power switch
	ON position of power switch
	Connection point of the neutral wire of installation
	AC voltage

### Precautions at transportation and installation



- Please never tilt or lay the product down during transportation.
- Be careful not to drop when transporting the product.
- This product was manufactured to move normally at the rated voltage. Confirm the voltage state before the installation of product.
- Install the product in a place where the floor is hard and flat. Failure to do so can cause accidents by negligence.



- Do not install the product where it can get damp or in a dusty environment. It may cause overheating or short circuit. (Pollution Degree 2)
- Do not install the product in a location at an altitude of over 2,000 meters. (6,562 feet).



- Install the product out of the direct rays of the sun.
- Do not install the product at gloomy place. If the product is installed at gloomy place, the unexpected accident by the movement mistake may occur.



- If water or organic solvent flows in the regulator part of the product or the interior of the body, the worry about short circuit exists. Do not install the product at the place where water or organic solvent is exposed.
- When the product is moved, separate the power plug from a wall outlet, and then move not to damage the product. The cord damage becomes the root cause for an electric shock or an ignition.
- If the product was moved or stored in high humidity state, identify the packaging state of the product before use. In case that the carton box or wooden box is soaked in water, consult with an engineer about the matter. Do not operate the equipment before the safety is confirmed. This wetting state may be the cause of an electric shock or a fire.
- When installing and using the product, please certainly use the power cord provided with the products.

### Precaution in use



- Please be familiar with the user manual before using this product, and operation should be performed only by qualified personnel.
- This product must be used within the permitted standard load resistance.
- This product should be operated in a room with temperature maintain between 5°C and 40°C. Long-term use in an environment that exceeds the allowable range may cause a malfunction.



- Do not cut or process the power cord or do not bend it by force or pull or tie up it. In addition, if heavy things are placed on the power cord, the power cord may be damaged and it may become the root cause of a fire or an electric shock.



- Please do not directly spray water on the product or wash it with water, to avoid short circuits or electric shock.
- Please do not touch or manipulate the electrical parts such as the power plug with wet hands electric shock.
- Please do not operate the product by manipulation of the plug to avoid electric shock or short circuits.



- Do not operate the product in the outdoors. It is not allowed to use it at the place that is exposed to the sun or at the place that is gotten in the rain. This leads the product to overheating or electric malfunction.



- Do not use the product on a high place or at high temperature. Do not use the product near the heater or the wind of air conditioner. The accident by the overheating of the equipment can occur.



- Do not put the product in places exposing to direct heat sources.
- Do not operate the equipment at the place of an inflammable danger or a fire danger. This triggers the severe accident such as an explosion or a fire.

- Please do not use the flammable spray such as lacquers and paint, or volatile, flammable chemicals and its similar product, in the proximity of the product. They may cause the ignition due to the spark of switch.

## 1. Warning and precautions



- Do not dismantle or transform the product by unauthorized person. It induces the severe electric problem, and you cannot receive the warranty service in that case.



- If you detect any noise, which is unlike any other time, or it exhibits wrong movement symptom, immediately turn off the power of the product and separate the power cable from the body.
- Use only a power outlet which has a ground (earth) terminal. Do not earth to gas pipe, plastic tap water pipe or phone line. It may cause an electrical shock, a fire, breakdown or explosion of the unit.
- Please regularly check whether dust or dirt are on the power plug and completely connect the plug. If the plug is covered with dust, or the connection is not complete, it will cause an electrical shock or fire.
- Please separate the power plug from the outlet for safety when the product is unused for long periods of time to avoid overheating or ignition due to dust.
- When disconnecting the power plug, it must be grasped by the hands and then pulled. Grasping only the cord and then disconnecting it may cause overheating or ignition because of internal lines being disconnected.
- The fluctuation of main power voltage should be lower than +/-10% of the nominal voltage.
- The maximum relative humidity is 80% at 31°C and 50% at 40°C.
- Please maintain the clean condition of this product by removing the foreign matter while gently wiping with the neutral detergent and a dry cloth after checking whether the foreign matter present or not, before and after using this product.
- If unexpected sound, smell or smog is generated, pull the main plug out from the wall socket and contact the technical service center.
- Only operate unit after checking the safety of the unit.
- The Sound Level of the buzzer is maximum 60dB in 1 meter distance when an error is detected.

## Warning and precautions



- Please keep a human body away from this product when this product is operating at high temperature. Please use this product after wearing the protective equipment at high temperature.
- Please wear the protective equipment because the heating temperature can be overheated above the setting temperature.
- Please always use the safety equipment (working clothes, gloves and safety glasses) when using this product.
- The internal temperature rises up to 70°C, so please be careful when opening or closing Air Duct or Door.
- Please be careful for burns because the residual heat may be remained even if this product is operating or the power was disconnected.
- Please do not use any kind of plastic container or the goods for dry purpose. The temperature around the heater mounted on the floor of the chamber is higher than the operating temperature, and if the internal temperature is rapidly risen due to the malfunction of user, there may present a fire risk.
- Please clean the inside of chamber and install the rack before using the product.
- The temperature of the Safety Switch should be set up 20 ~ 30°C higher than the operating temperature. If the Safety Switch is set to 0, the heater does not operate.
- If irradiated or contaminated samples are placed in the chamber, the warranty is voided. Do not use this product to sterilize or disinfect objects or samples.
- Leave enough space around this product for ventilation and fire prevention. Leave at least 20cm at the back side and 100cm from side walls and from ceiling.
- Do not leave object at inner floor of chamber. Must use rack because the direct contact to floor may damage the product.



## 2. Introduction and explanation

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### 2.1. Function and characteristic

DAIHAN Biomedical supplies two types of incubator Model by air circulation method. The forced air circulation system is applied for model iF that makes maximum vertical air flow for highly uniform temperature and minimizes cross contamination between samples. The natural convection method is applied for model iG that generates radiant heat and conductive heat at bottom of chamber as well as at both sides to supplement and maximize the effect of natural convection. The product thus can be applicable to various labs in diverse disciplines and has the following features.

1. Applies high precision controller so that the precise temperature control and maintaining accurate temperature is possible. Also, can minimize the heating time and temperature restoring time after door open and close.
2. Maximize insulation performance and heat efficiency by air-flow layer between inner box and outer box of chamber.
3. Stainless steel material is used for inside of chamber to minimize corrosion, and rack of Teflon material that has chemical resistance is provided.
4. Glass window is installed to help convenient observation for sample status, and exterior insulation door minimizes heat loss.
5. High quality LCD Display and Rotary Switch help easy operation and convenient use.
6. Support more efficient testing environment by temperature correction and delay timer setting function.
7. Remotely controllable by connecting to PC via RS232 communication port and can get transmitted data.
8. For user's safety, heating will be stopped if door is open during operation and alarm will work after passing certain time, which minimize errors during operation.
9. The timer installed in the product will enable users to set the duration of the operation of the product up to 99 hours and 59 minutes.
10. The product is furnished with functions capable of protecting the overheating, overcurrent, and sensor errors of the product to secure the safety of users.

## 2. Introduction and explanation

### 2.2. Product structure

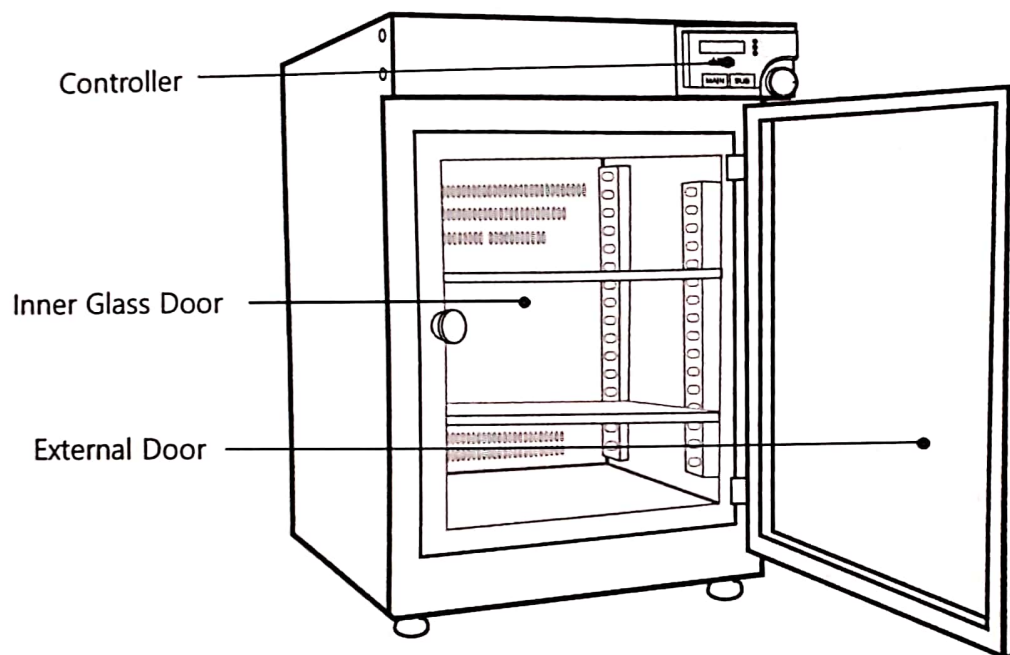


Fig 2-1. Front

- Controller : Controlling and checking of the operation
- Inner Glass Door : For chamber inside observation

## 2. Introduction and explanation

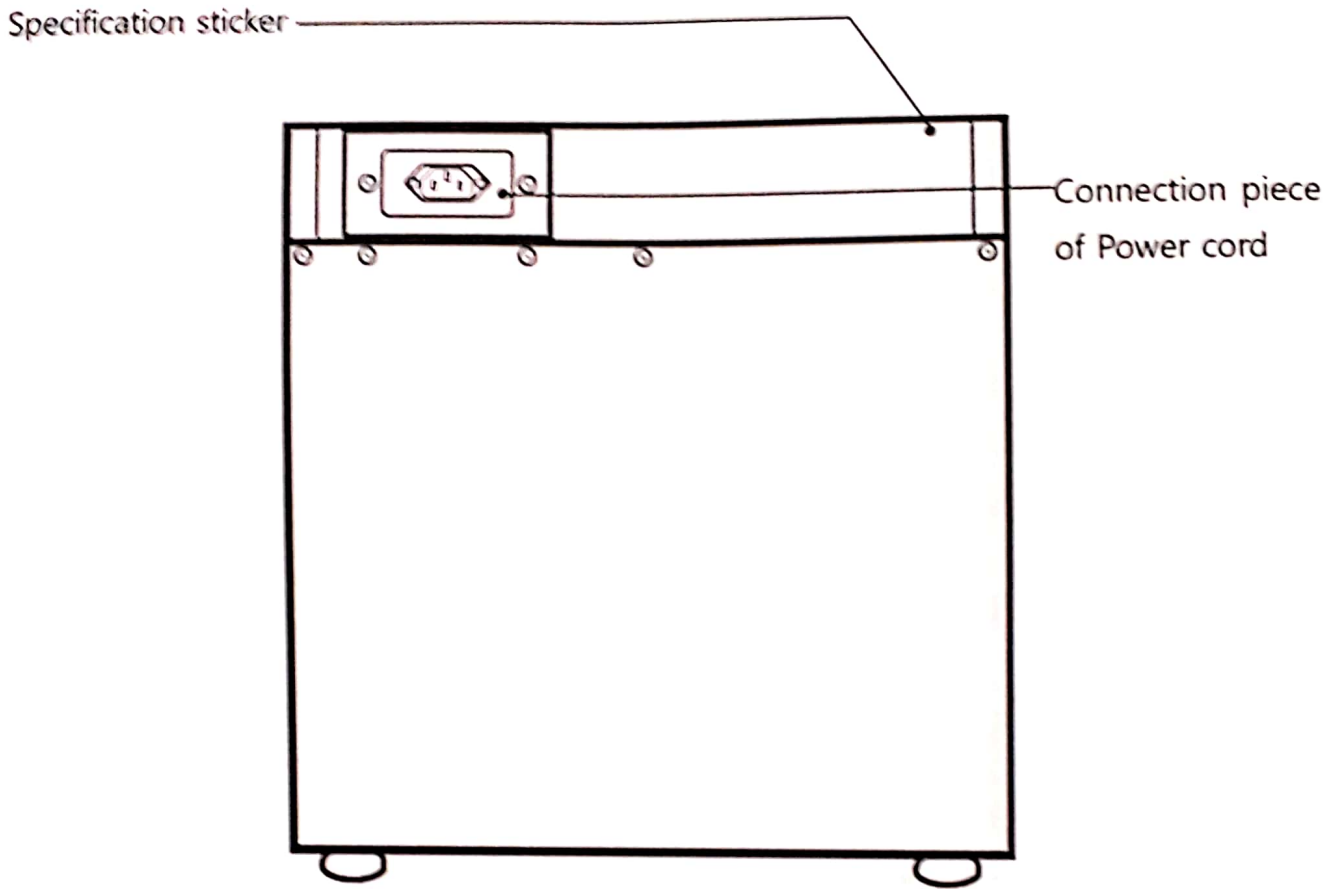
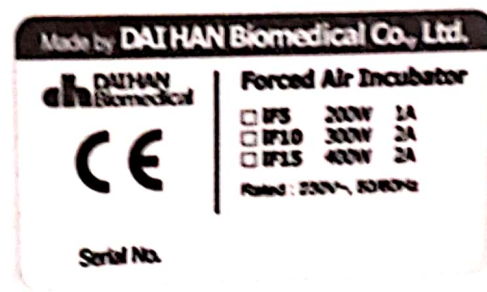
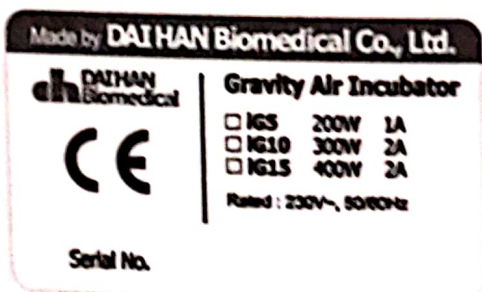


Fig 2-2. Rear

- Specification sticker : Recording the specification and serial number of product.



## 2. Introduction and explanation

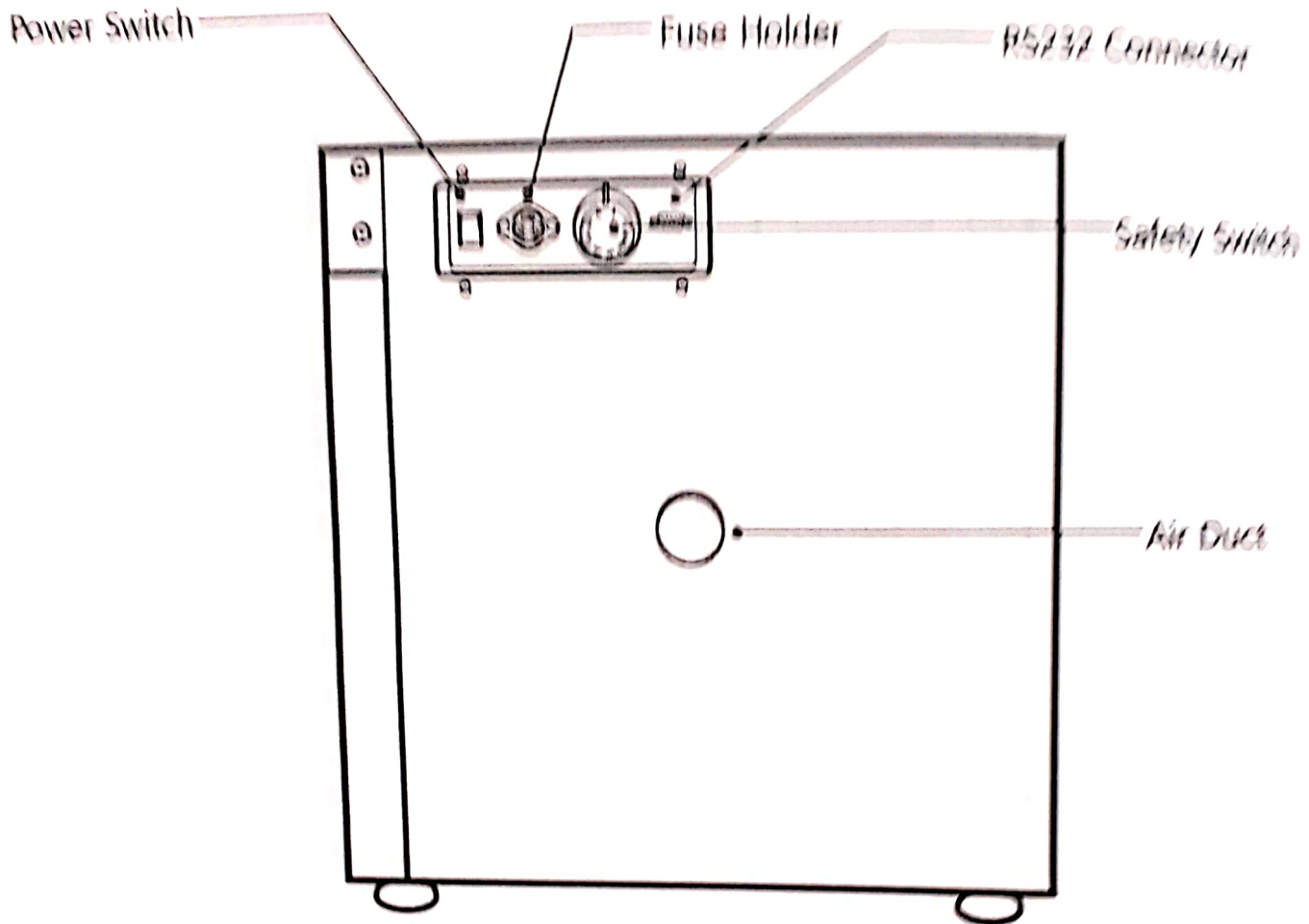


Fig 2-3. Side

- Power Switch : Equipment power ON/OFF
- Fuse Holder : Fixing the fuse and protection not to expose.
- Safety Switch : Prevent overheat.  
Automatic shut off of heater power when it operates above the set temperature of Safety Switch.
- RS232 Connector : Port for connecting cable to PC  
Monitoring and controlling by PC
- Air Duct : Control air circulation of chamber inside

## 2. Introduction and explanation

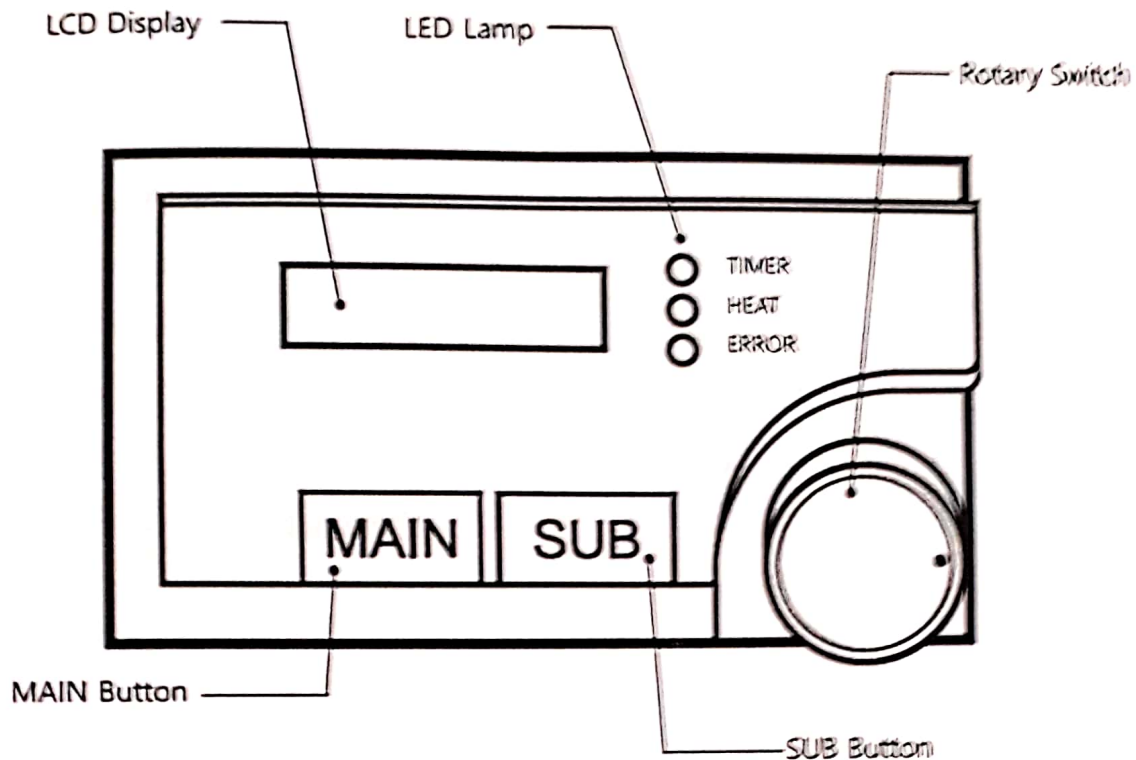


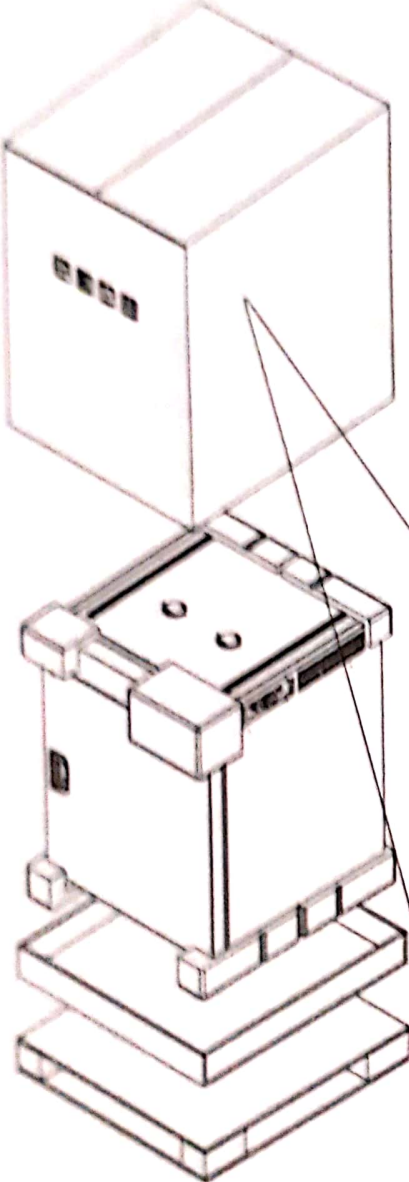
Fig 2-4. Controller

- MAIN Button : Mode change button  
(Timer setting mode, Temperature setting mode, Locking mode)
- SUB Button : Sub mode selection button  
(Delay Timer mode, temperature Offset setting mode)
- LCD Display : Display operation information
- LED Lamp : Indication of operation status (Timer, Heating, Locking)
- Rotary Switch : Turn the clockwise or counterclockwise to adjust the setting value,  
Push the once to START/STOP the operation,  
Push the 2 to 3 seconds to save the setting value.

### 3. Product installation

### 3. Product installation

#### 3.1. Shipping and packing



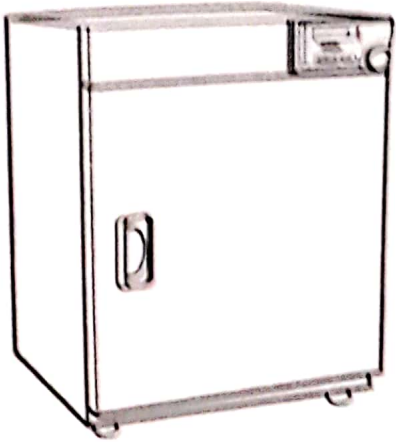
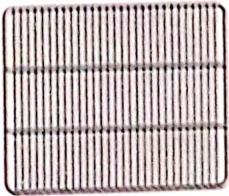


- Packing Size
  - iG5 : w628 x d652 x h775mm
  - iG10 : w731 x d710 x h1,018mm
  - iG15 : w796 x d772 x h1,083mm
  - iF5 : w628 x d752 x h775mm
  - iF10 : w710 x d731 x h1,018mm
  - iF15 : w731 x d810 x h1,018mm

- Gross Weight
  - iG5 : 53kg
  - iG10 : 67kg
  - iG15 : 78kg
  - iF5 : 58kg
  - iF10 : 74kg
  - iF15 : 92kg



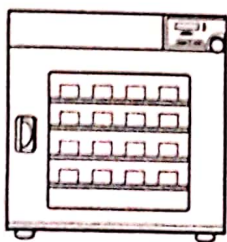
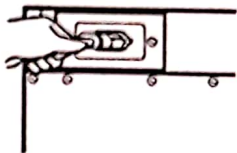
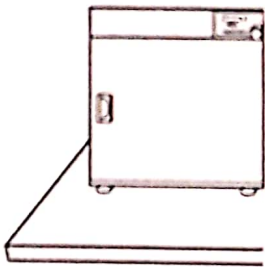
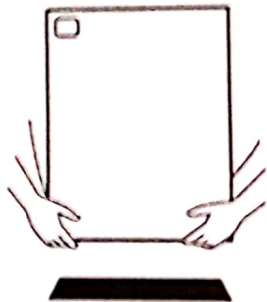
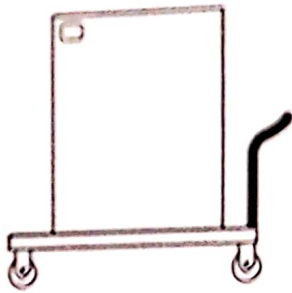
Precautions	
	Be careful not to be wet.
	Be careful because any damage by a shock can occur.

3.2. Composition identification

Basic Components		Qty
1		1
2		2
3		1
4		1

## 3. Product installation

### 3.3. How to install



1. This Product is not equipped with casters. Units should be moved using a cart.
2. Remove the packaging of the product at the place in which the floor of the interior is flat and the horizontality is maintained, and place it on the designated place.
3. To lift the product, two people should hold both bottom ends and lift and move.
4. Recommend that the product keeps a certain distance with other products. As the heat is generated by operating the product for long time, do not arrange the wall or other products near the product.
5. Confirm whether or not the power cable which is supplied together with the product is damaged, and connect it with the product.
6. Insert the socket in the other side into the wall plug. In case of using a power strip, be careful not to exceed the electrical energy of maximum sum.
7. Before operation, Set the Safety Switch to 20~30°C higher than operation temperature.
8. Please don't place samples to the floor of inner chamber. For proper air circulation in the working chamber, please don't load samples too tightly and give enough and regular space between samples.



### 3. Product installation

### 3.4 Product specification

Model	IG5	IG10	IG15	IF5	IF10	IF15	
Circulation Type	Gravity-air Flow			Forced-air Flow			
Capacity	50Lit	105Lit	155Lit	50Lit	105Lit	155Lit	
Temp.	Range	Ambient Temperature +5°C to 70°C					
	Fluctuation	±0.2°C at 37°C, ±0.3°C at 50°C					
	Variation	±0.6°C at 37°C, ±1.0°C at 50°C		±0.5°C at 37°C ±0.9°C at 50°C	±0.4°C at 37°C, ±0.7°C at 50°C		
	Sensor	PT 100					
	Resolution	0.1°C-Display, 0.1°C-Control					
Heat-up Time	25min. to 37°C, 40min. to 50°C		30min. to 37°C 40min. to 50°C	17min. to 37°C 28min. to 50°C	17min. to 37°C, 30min. to 50°C		
Recovery Time (Door open 30sec)	8min. to 37°C 12min. to 50°C	10min. to 37°C 15min. to 50°C		3min. to 37°C 4min. to 50°C			
Heater Power	200W	300W	400W	200W	300W	400W	
Controller	Digital Fuzzy Controller with Rotary Switch						
Timer	99hr 59min., ±1 min. increments						
Display	Full Digital LCD Display with Back-Light Function						
Inner Door	with 1ea of Inner Tempered Glass Door						
Shelves	Included 2ea of Teflon Coated shelves						
Ventilation	1ea of Ventilation hole with Stainless Steel Cap, Hole Diameter 40mm						
Safety device	Over Temp. and Over Current Protector, Sensor Error Detector						
RS232 Port	Available to connect with PC						
Material	Internal	Stainless Steel(#304)					
	External	Powder Coated Steel					
Dimension (width)(mm)	Interior	370x350x420	485x409x535	550x474x600	370x350x420	485x409x535	550x474x600
	Exterior	518x537x701	635x595x841	700x660x906	518x637x701	635x695x841	700x760x906
Weight	40kg	59kg	71kg	46kg	66kg	81kg	
Packing Size (width)(mm)	628x652x775	731x710x1,018	796x775x1,083	628x752x775	710x731x1,018	731x810x1,018	
Gross Weight	53kg	67kg	78kg	58kg	74kg	92kg	
Power Consumption	320W	400W	500kW	400W	500W	600kW	
Energy Consumption,	41Wh at 37°C 103Wh at 50°C	63Wh at 37°C 152Wh at 50°C	99Wh at 37°C 212Wh at 50°C	28Wh at 37°C 84Wh at 50°C	43Wh at 37°C 129Wh at 50°C	58Wh at 37°C 145Wh at 50°C	
Power Supply	1 Phase, AC 120V, 60Hz or AC 230V, 50/60 HZ						

### 1. How to use

#### 1. How to use

1. Confirm whether the power cable is normally connected or not.
2. Before operation, Set the Safety Switch to 20~30°C higher than operation temperature.
3. Press the power switch which is positioned at the back side of the product.

### 4.2 Setting TIMER

Time SV :	00:00
Time PV :	00:00

1. The display for the setting of Timer will appear initially.
2. Timer set time is displayed on Time SV, and timer remaining time is displayed on Time PV.
3. Timer LED blinks on timer setting screen, and Timer LED is lit notifying it is on operation if changed to other mode during operation.
4. Rotate the rotary switch on the controller clockwise or counterclockwise to adjust the set values of the timer. The range of values of the time set by the timer can be up to 99 time and 59 minutes and the set value will be varying by a unit of 1 minutes.
5. Push the Rotary Switch once and shortly then the product will start the timer operation.
6. Push the Rotary Switch once shortly in the display of setting of timer during an operation of the product then the product in its timer will stop thereby.
7. When the value of timer is set 0 then the product will operate with set value continuously. In the case the value of timer is entered into the product then the product will stop its operation of heating with an alarm on the expiry of the set value of timer.

8. Push the rotary switch for 2~3 seconds then the set value of timer will be blinking and be stored thereby. The stored value of timer that remaining unchanged will be reappearing by the next turn-on of power supply.

### 4.3 Setting Delay Time

DTim SV :	00:00
DTim PV :	00:00

1. Press SUB button on timer setting screen to move to Delay Time setting screen.
2. The Delay Timer sets the reservation time and has the function that sets so that the operation of Heating and Timer are performed after that time is elapsed.  
The proper use of the delay timer is to manipulate so that the reservation time is set for the first time, and then the temperature and the operation timer is set and the set operation is automatically operated after the reservation time is elapsed.
3. DTime SV displays setting delay timer time, and DTime PV displays delay time of timer.
4. Timer LED blinks on timer setting screen, and Timer LED is lit notifying it is on operation if changed to other mode during operation.
5. Turn the Rotary Switch clockwise or counterclockwise to adjust the set value. Press the PUSH button to have the set value fixed on the display. The Reservation Timer for reserved operation of product will then begin.
6. On completion of the pre-setting of the value of the timer for reserved operation of product (Reservation Timer) then push the MAIN button to set the value of Timer for current operation and then, push the Rotary Switch once shortly to start the operation. And then, push the MAIN button again to set the value of temperature and thereafter push the Rotary Switch once shortly to start the operation thereof.

7. The 'Start' under the condition of Reservation Timer carrying set values will not mean an immediate initiation of product operation thereof but rather, it means the initiation of product operation according to the values set in the Reservation Timer. Thus the consecutive initiation of the operations of the 'Start' explained above will let the product to operate according to the values of temperature and timer set respectively by users for the operation in the interval after the pre-set operation.
8. The Delay Timer cannot be activated during heating of the product or during operations led by the Timer. Stop the operation of product to set values for the Delay Timer.
9. If pressing MAIN button, it is switched to the timer setting screen.

### 4.4 Setting Operation Temperature

Temp SV :	0 °C
Temp PV :	27 °C

1. Click the MAIN button in the display of setting of timer then the display will be changed into the display of setting values of the operation temperature.
2. Temp SV displays set temperature, Temp PV displays current temperature.
3. Rotate the rotary switch on the controller clockwise or counterclockwise to adjust the set values. The values available for the set temperature ranges from ambient +5°C to 70.0°C and the set values will be varying by the unit value of 0.1°C.
4. Push the Rotary Switch once and shortly then the product will start the heating operation to the set temperature.
5. Push the Rotary Switch once shortly in the display of setting of operation temperature during an operation of the product then the product in its heating operation will stop thereby.

6. Push the rotary switch for 2~3 seconds then the set value will be blinking and be stored thereby. The stored value that remaining unchanged will be reappearing by the next turn-on of power supply.

#### 4.5 Setting temperature Offset

Temp PV :	27.0 °C
Offset :	0.0 °C

1. Offset value is the function that can add or reduce the constant value by setting the compensation value in the case that user must experiment by matching the thermometer which he/she is using as the experimental standard and the thermometer indicated in this regulator.
2. Press SUB button at temperature setting screen to change to Offset setting screen.
3. Temp PV displays current temperature, and below is offset setting value.
4. The scope of the compensative value is  $-10.0^{\circ}\text{C} \sim +10.0^{\circ}\text{C}$ , and it is possible to adjust at  $0.1^{\circ}\text{C}$  unit.
5. After setting the compensation value, the indication of the current temperature is displayed as the temperature including the compensation value.
6. If you enter the mode of Setup of Correction Values during heating of the product, the heating of the product will stop. Resume the heating of the product from the display of setting temperature values after completing the Setup of Correction Values.
7. Push the rotary switch for 2~3 seconds then the set value will be blinking and be stored thereby.

The stored value that remaining unchanged will be reappearing by the next turn-on of power supply.

8. If pressing MAIN button, it is switched to the Temperature setting screen.

## 4. How to use

### 4.6 Locking MODE

Temp PV :	27.0 °C
Time PV :	00:00

1. Click the MAIN button in the display of setting of operation temperature then the display will be changed into the display of locking mode.
2. Accelerating and stop right after the locked display will prevent potential risks of malfunctioning of the product due to unintended turning of Rotary Switch or disabled application of push button. Besides, the remaining time in timer and current speed of operation will be displayed thereon together for users' convenience.
3. Temp PV displays current temperature, and Time PV displays remaining time of timer.
4. If pressing MAIN button, it is switched to the timer setting screen.

### 4.7 Automatic Operation Function

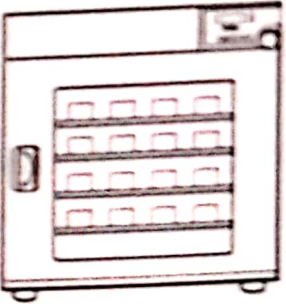
1. In the use of the product, if the power supply has been interrupted and then is reapplied, it has the function that protects the experimental results and samples by automatically reactivating as the setting of final operation.
2. Press Rotary Switch for 2~3 seconds after setting temperature value on Operating temperature set value mode, then the set value will blink and be saved. It will automatically restart with the saved temperature value upon power rebooting.
3. For safety reason or by user's intention, if automatic operation on rebooting the power needs to be inactive, save temperature set value as "0".

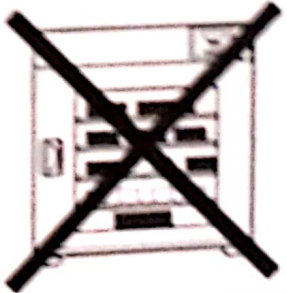
5. Product management

5.1. Regular inspection

Classifications	A period of checking time		
	Day	Week	Month
Connection state of the source of electric power	✓		
Damage of power cable	✓		
Cleaning state of power cable	✓		
Cleaning state of the Controller	✓		
Cleaning state of the body	✓		
Shape preservation of rubber foot		✓	
Normal Control of Operation Mode		✓	
Normal Control of Adjusting Knob		✓	
Damage state of fuse		✓	
Normal Control of Safety Switch	✓		
State of connected shelves			✓

Sample loading method.



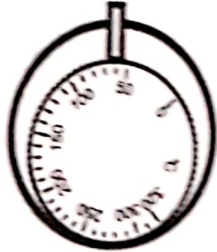






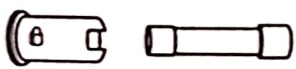

1. Please don't place samples to the floor of inner chamber, it may cause overheating or fire.
2. For proper air circulation in the working chamber, please don't load samples too tightly and give enough and regular space between samples.
3. Please don't touch side or floor in the chamber, it may have high temperature still and may cause injury.

## 5. Product management

### Inspection method of the Safety Switch

		
<p>On the product side, check the Safety Switch.</p>	<p>If the power of the product is OFF, check the 'Tak' sound in the vicinity of room temperature when slowly turning clockwise up to 120°C after adjusting the Safety Switch to 0°C.</p> <p>Call the service if you do not hear 'tick' sound as the sound 'tick' is normal.</p>	<p>If the power of the product is ON, check the 'Tak' sound in the vicinity of current temperature of product when slowly turning clockwise up to 120°C after adjusting the Safety Switch to 0°C.</p> <p>Call the service if you do not hear 'tick' sound as the sound 'tick' is normal.</p>

### How to replace the fuse

			
<p>On the product side, check the Fuse Holder.</p>	<p>Separate from main body by rotating Holder clockwise by hand.</p>	<p>Check fuse and replace.</p> <p>(120V) iG5, iG10, iG15, iF5, iF10, iF15 : 250V F 5AH</p> <p>(230V) iG5, iG10, iG15, iF5, iF10, iF15 : 250V F 3AH</p>	<p>Reinstall the Fuse Holder to main body.</p>



## 5. Product management

### 5.2. Cleaning and storage

#### Cleaning of the product

Maintain the cleaning state of the product by regular cleaning. The regular maintenance of the product extends the use period of the product and minimizes the contamination of specimen.

1. Confirm whether or not any foreign matters exist, and if yes, immediately wipe off them.
2. Do not use abrasive or detergent based on solvent.
3. If a chemical substance stains the product, wear gloves and a mask which are composed of chemical resistance material, and wipe off them with a piece of dry cloth.
4. When cleaning the product, you must separate the power cord from the body.
5. For the part from which the contaminant is not easily erased, wipe off only the part with the towel wetting with the solvent that has low freezing point.
6. The Air Duct is controlled by user's needs, and if it is unused, it should be closed the entrance and then stored in order to prevent the external contaminants entering from the entrance.
7. Do not place electrifying or flammable material into the vent at product exterior as it may cause dangerous electric shock or fire.

#### Disposal of the product



- When the warranty period of the product is terminated, it should be disposed in accordance with the management regulation of wastes of the corresponding territory.

#### Storage of the product

1. If the product is not used for long time, separate the power socket from the body, wrap and store it.
2. Store them in the same place not to lose the components.

## 6. Troubleshooting

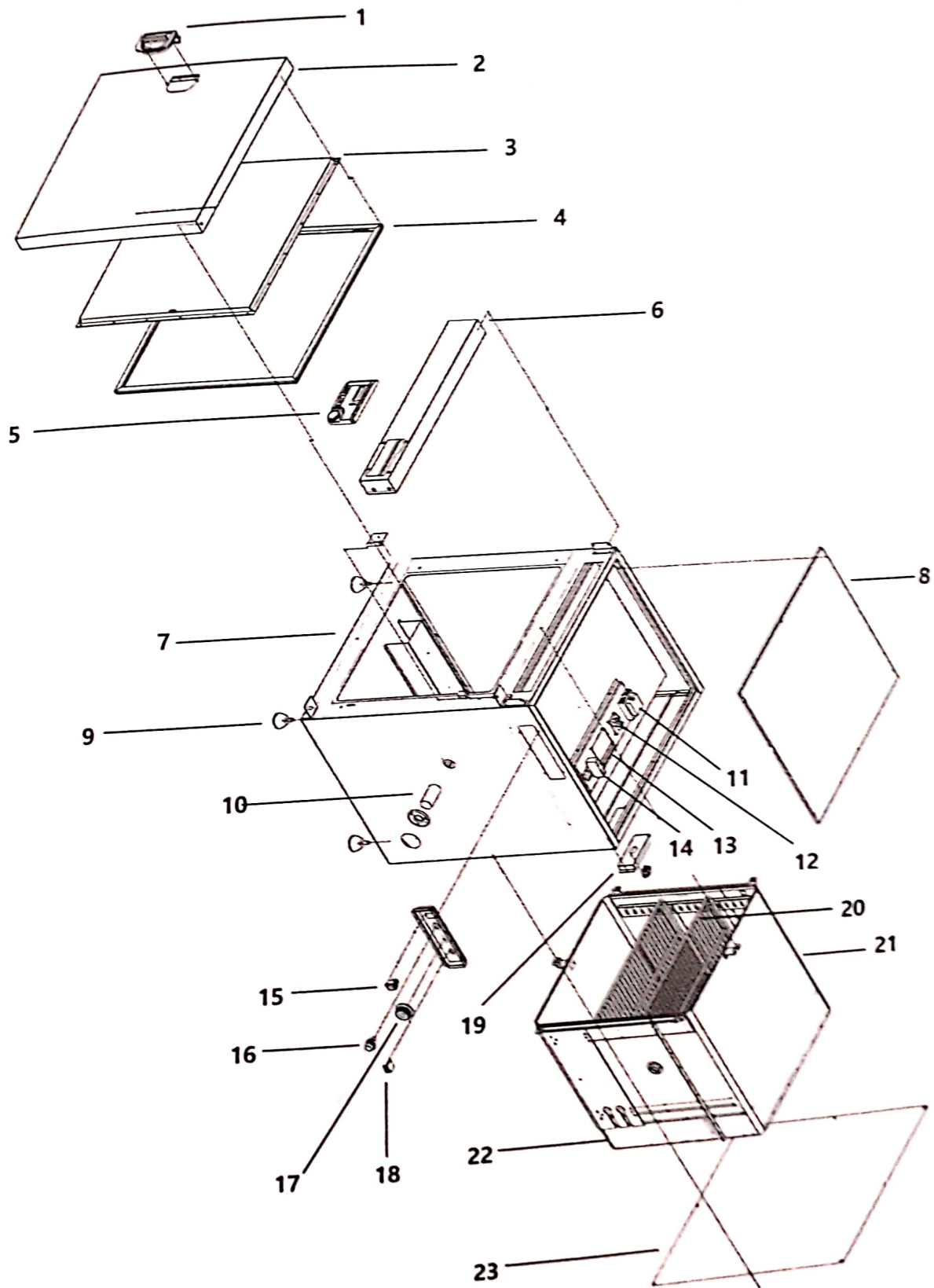
### 6.1. Error identification

Problem	Possible Causes	Corrective Action
ERROR 1	<ul style="list-style-type: none"> <li>Problems of Abnormal Heating and Abnormal Display of Set Temperature Value.</li> <li>Trouble of the temperature sensor.</li> </ul>	<ul style="list-style-type: none"> <li>Contact our customer service.</li> </ul>
ERROR 3	<ul style="list-style-type: none"> <li>Door is opened.</li> <li>Door Limit Sensor malfunction.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure again Door is closed.</li> <li>If the problem is not solved, contact our customer service.</li> </ul>
When the Power does not work.	<ul style="list-style-type: none"> <li>Power supply which is not met with the electric power voltage of the product.</li> <li>Switch-off of the residual-current device at the installation place or occurrence of power failure.</li> <li>Inaccurate connection between a power plug and a socket.</li> <li>Damage of socket/plug/power cable.</li> <li>Disorder of either embedded sensor or controlling device.</li> <li>Short-circuit of fuse.</li> </ul>	<ol style="list-style-type: none"> <li>Confirm whether the power switch is ON or not.</li> <li>Confirm whether power failure occurs or not.</li> <li>Connect the power plug to the wall socket accurately.</li> <li>If the short-circuit of fuse occurs, replace it.</li> <li>If the problem is not solved, contact our customer service.</li> </ol>
When the heat does not work.	<ul style="list-style-type: none"> <li>Locking mode status.</li> <li>Low set temperature of Safety Switch.</li> <li>Disorder of either embedded sensor or controlling device.</li> </ul>	<ol style="list-style-type: none"> <li>Check operation mode of current screen.</li> <li>Check if the push button of Rotary Switch has been pressed correctly to operate the product at the set value.</li> <li>Set the Safety Switch 20°C ~ 30°C higher than temperature in use.</li> <li>If the problem is not solved, contact our customer service.</li> </ol>

# 6. Troubleshooting

## 6.2. Drawing and part information

iF model

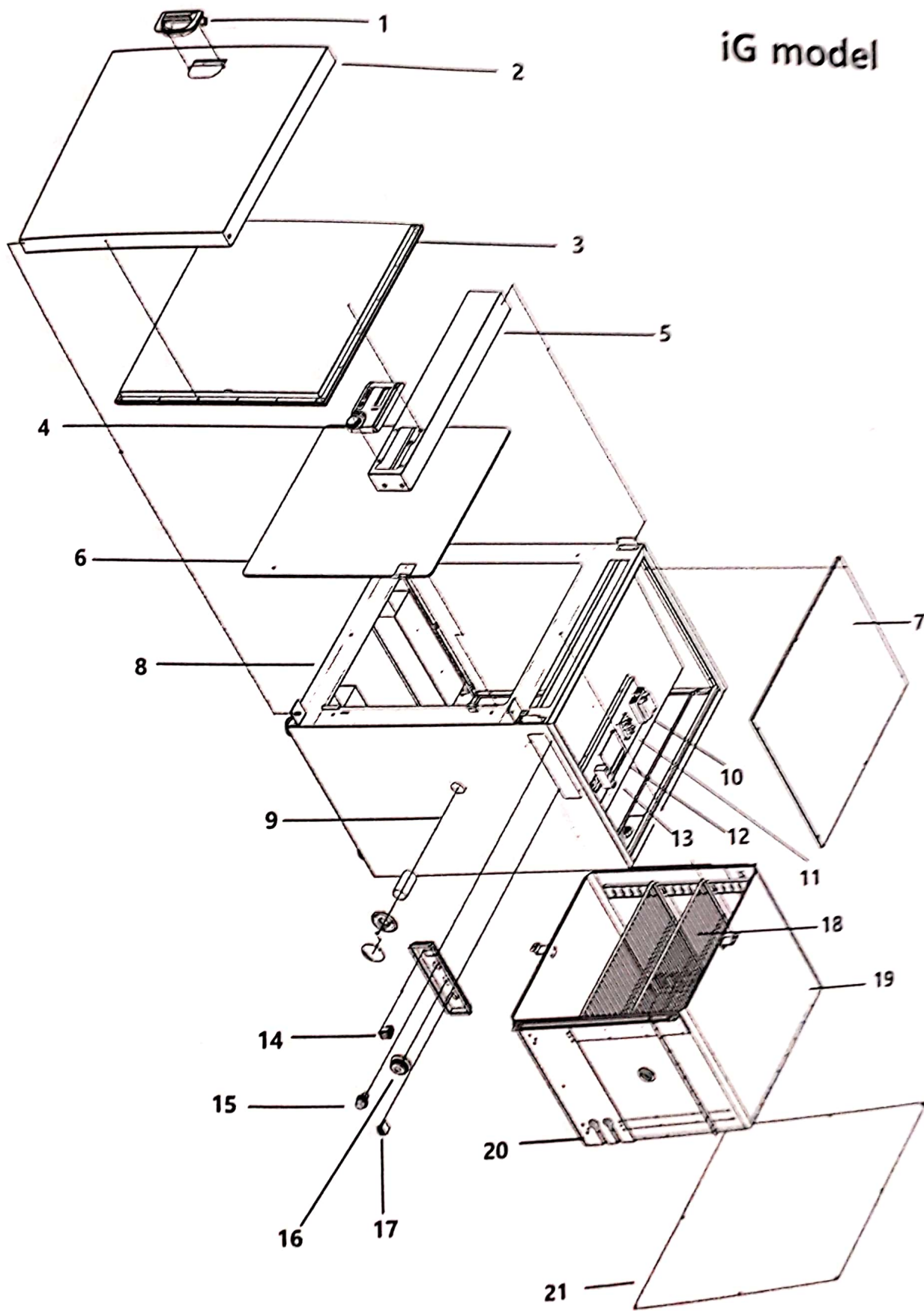


### iF model

No.	Description
1	Door Handle
2	Door
3	Door insulation
4	Door Cover
5	Front Control Panel
6	Front Cover
7	Main Case
8	Top Cover
9	Feet (4)
10	Air Duct assembly
11	SSR
12	SMPS
13	Controller Board
14	Terminal Block
15	Power Switch
16	Fuse Holder & Fuse
17	Safety Switch
18	RS232 Port
19	AC Inlet
20	Shelve
21	Inner chamber
22	Heater
23	Rear cover

# 6. Troubleshooting

iG model



### iG model

No.	Description
1	Door Handle
2	Door
3	Door Cover
4	Front Control Panel
5	Front Cover
6	Inner Glass Door
7	Top Cover
8	Main Case
9	Air Duct assembly
10	SSR
11	SMPS
12	Controller Board
13	Terminal Block
14	Power Switch
15	Fuse Holder & Fuse
16	Safety Switch
17	RS232 Port
18	Shelve
19	Inner chamber
20	Heater
21	Rear cover

### 6.3. Service request

#### Free warranty service

If any malfunction due to the flaw of the product occurs within 2 years from the purchasing date, the product is free repaired or replaced it with the same kind product.

#### Onerous service

- In case after a lapse of warranty service period of 2 years.
- In case the product is arbitrarily remodeled or repaired.
- In case the malfunction by natural disaster. (fire, damage of sea water, gas disaster, flood damage and so on)
- In case the malfunction occurs by no observation of the use voltage.
- In case the malfunction occurs by dropping the product or shocking the product.
- In case the appearance is damaged by organic solvent.
- In case the malfunction occurs by not observing the safety caution and warning described in the user manual.
- In case the malfunction occurs by the handling carelessness of the user.

#### Request of the service

If any abnormal symptom occurs during using the product, you are able to receive the repair after inquiring our head office.

#### DAIHAN Biomedical Co., Ltd.

Head Office : 708, Gieopdosi-ro 200, Jijeong-myeon, Wonju-si, Gangwon-do, Korea

Sales & R & D Center : 5F 8-9, Nambusunhwan-ro 364-gil, Seocho-gu, Seoul, Korea

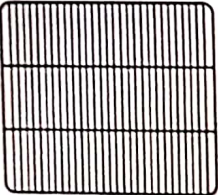
Phone: +82-2-6927-0495~6

Fax: +82-2-6953-0599

Email: info@daihan-biomedical.com

## 7. Accessory

### 7. Accessory

Component	Ordering Number	Information
	LE.1201010	Teflon Coated shelves with rail type for iG5, iF5
	LE.1201020	Teflon Coated shelves with rail type for iG10, iF10
	LE.1201030	Teflon Coated shelves with rail type for iG15, iF15
	LE.1211110	Stainless steel Wire shelves with rail type for iG5, iF5
	LE.1211120	Stainless steel Wire shelves with rail type for iG10, iF10
	LE.1211130	Stainless steel Wire shelves with rail type for iG15, iF15



## Declaration of Conformity

**Manufacture** : DAIHAN Biomedical Co., Ltd.

708, Gieopdosi-ro 200, jijeong-myeon, Wonju-si,

Gangwon-do, Korea

Tel: +82-2-6927-0495

Fax: 82-2-6953-0599

**Equipment / Model name** : Incubator / iG5 , iG10 , iG15

**Description of Equipment** : Gravity Air Incubator

**Directive** : Low-Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

**Applied Standards** : EN 61326, EN 61000-3-2, EN 61000-3-3

EN 61010-1, EN 61010-2

I declare that this apparatus conforms to the requirements of the above Directives.

Data 2017-05-02

Signature



Eun Taek Shu  
President / CEO  
DAIHAN Biomedical Co., Ltd.



DAIHAN Biomedical will make efforts to be genuinely recognized by customers.  
For your healthy and prosperous life we will stay around you with modest beginner's  
attitude.

Please stay tuned with us.

Thank you!