

OPERATING MANUAL

GENERAL INCUBATOR

MODEL : NB-201(C) & NB-201L



N-BIOTEK
Leading Life science

INTRODUCTION

Thank you for purchasing N-BIOTEK General Incubator.

This operation manual describes practical information such as performance, usage, and cautions and notices for the use of the product.

So, before using the product, please read it carefully all the safety instructions described in this manual and keep this manual for future use.

WARRANTY

Item	General Incubator	Model	NB-201(C & L)
Date of Installation	mm-dd-year	Supplier	
Serial NO.		Period	1 year

N-BIOTEK provides a warranty on all parts and factory workmanship. The warranty includes areas of defective material and workmanship, provided such defect results from normal and proper use of the equipment.

1. The free warranty service will be provided once the unit is proved to be defective by wrong workmanship after N-BIOTEK or reliable distributor's examination.
2. The warranty period is 1 year from date of installation or 1 and Half year from the date of shipment from N-BIOTEK, whichever is sooner as indicated in above table. This period is proved by serial no.
3. N-BIOTEK will not be responsible of free warranty service for the faulty caused by user's improper operation, excessive use, use of incorrect voltage & frequency, storage in wrong environment mentioned in Manual.
- 4.. Complete the above table after installation and keep this card. Then, present it to a dealer or N-BIOTEK when warranty repair is needed.

Signed By



President Daeyong Kim
N-BIOTEK, INC.

PRECAUTION

- **Precaution is to prevent the possible accident or danger during operation. So, you must keep it.**

- **Precaution is separated into caution and warning. And, each of them has following meanings.**



Warning

If you don't keep this warning, you can get an accident or a fire.



Caution

If you don't keep this caution, you can get injured as well as a property loss

■ Other Marks



Warning



Caution



Compliance



Prohibition



No disassemble



Remove plug



Ground

1. Precaution for using the power



WARNING



Use this product only internally.

(If the product is used at the place in different power pressure, it causes a fire and malfunction of the product.)



Do not make the power plug be pressed by back of the product.

(A space between the product and the plug must be 20cm at least.)



The power outlet must be only for this product.

(Using various products simultaneously can cause a fire)



Clean the power plug with a dry towel and connect it properly.

(Foreign substances or unsafe connection can cause a fire.)



Do not bend the power cable harshly and do not make it to be pressed by heavy products.

(When it is damaged, it can cause a fire.)



Do not touch the power cord with wet hands.

(It can cause an electric shock.)



Do not use the damaged power cord and outlet.

(It can cause an electric shock and a fire.)



When the smoke comes out from the product or smell something is burning or any other strange symptoms are occurred, pull out the power cord and stop using it.
(It can cause an electric shock and a fire.)

2. Precaution for installation



WARNING



Use it with the proper voltage.
Please check the voltage & Hertz written on serial label.
(Over-voltage, low-voltage can damage the product and poor performance.)



Do not install at a humid place.
(It causes an electric leakage accident and a corrosive of the product.)



Keep this product out of the direct ray of sun and do not install at a hot place or a place that is near an electric heat.
(The proper operation temperature is 17°C ~ 30°C.)



Do not put inflammable substances near the product.
(It can cause a fire)



CAUTION



The product requires the distance, at least 20 cm from the wall for well ventilation.
(When ventilation works well, you will use the product satisfyingly regarding a cooling ability and a heat.)



Install at a flat and solid place.
(If the ground is not flat, it causes a vibration of the product.)



When you move the product, you must hold up the product.
(Pushing or pulling the product can damage the bottom part of the product.)



When the movement of the product is required, please tie up the door and other movable part with a tape.
(Able to get an injury by opening door and get a damage of the product.)

3. Precaution for use



WARNING



You must not disassemble, fix and remodel the product by yourself.
(You can damage the product throughout a fire and malfunction or get a loss from a different study result than the original purpose)



Do not use an inflammable spray near the product.
(The switch and other electric connection parts can cause a fire.)



Be careful to use inflammable substances such as benzene, thinner, alcohol and LP gas.
(It can cause a fire and an explosion.)



To prevent water and experiment material from going into the control panel during the experiment, make sure to clean the control panel with a dry towel.
(It can cause a fire and an explosion.)



Do not disassemble the shaker during the product is operating.



CAUTION



Do not wash the product with excessive quantity of water, thinner, benzene and Petroleum.
(It can cause an electric leakage, and malfunction or damage of the surface.)



When you don't use the product or clean it, please pull out the power plug.
(It is to prevent an electric leakage.)



Open and close the door softly and please use a door knob.
(A heavy shock can damage the product and breakdown the operating part.
Also your hands can be stuck between the door and body.)



Do not detach the built-in lamp and electrical devices.
(It can cause an electric shock and a fire.)



Please be sure to prevent foreign substances from getting into the sealing silicon of the door.
(The inflow of open air can cause the change of temperature in chamber and discoloration of the packing part by a foreign substance.)

4. Precaution for ground connection



WARNING

- Please ground before use the product, if you don't ground, you can be electrically shocked when malfunction or an electric leakage occurs



At the place where you can't ground,

- * Please buy the equipment to prevent elect leakage.
- * An electric shock, an electric leakage and a fire can be occurred without an electric leakage breaker.



Do not ground to these places; Gas Pipe, water pipe, pipe, lighting rod, telephone wire, etc.

- * Wrong ground connection can occur an electric shock, an electric leakage and a fire.



If you don't have the outlet for AC 220V, then bury it under the ground after connecting the ground line to copper plate.

- * No ground connection can occur an electric shock, an electric leakage and a Fire.

FEATURES

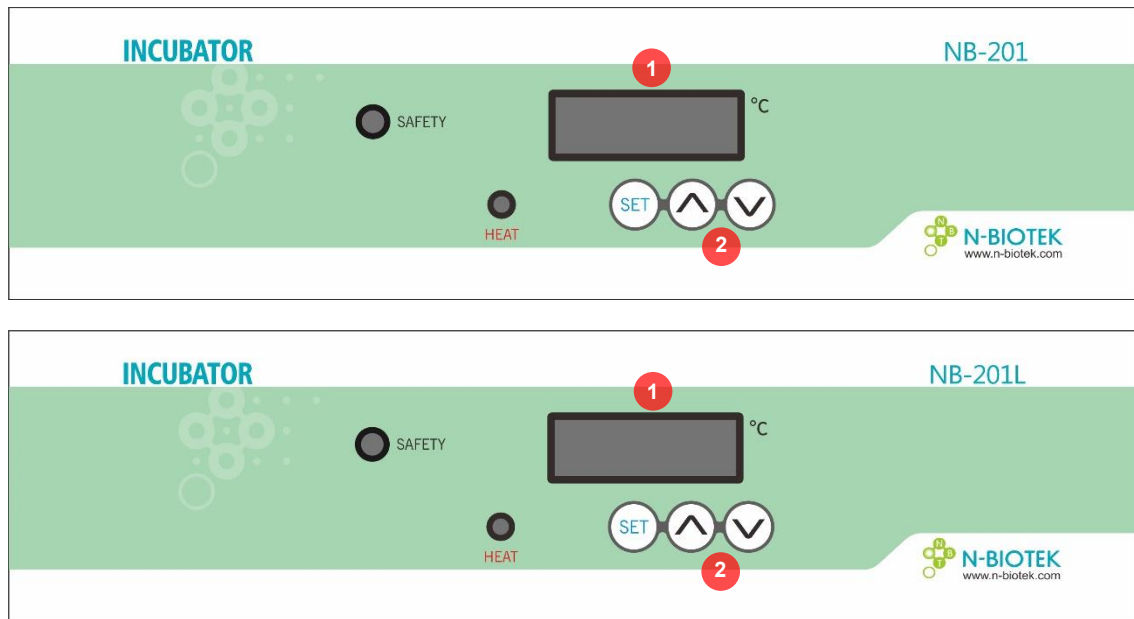
- * Artificial intelligence system (NB-TAC SYS)
Temperature uniformity is maintained precisely even in the natural convection by intelligent equipment (NB-TAC SYS)
- * Microprocessor controller
Temperature accuracy and reproducibility are excellent by using Microprocessor Controller.
- * Safety Switch is equipped to prevent overshooting.
- * Inner glass door allows you not to open door for your observation inside.
- * Peltier (NB201C only)
Cooling system allows the experiment in lower temperature than ambient temperature.

SPECIFICATION

Items	Unit	NB-201	NB-201C	NB-201L
Temperature				
range		Ambient +5°C to 60°C	5°C Below Ambient to 60°C	Ambient +5°C to 60°C
accuracy		±0.3°C at 37°C	±0.3°C at 37°C	±0.3°C at 37°C
increment		0.1°C	0.1°C	0.1°C
cooling			Peltier	
control		Microprocessor digital PID	Microprocessor digital PID	Microprocessor digital PID
Door				
out door		Silicon Packing Magnet Door	Silicon Packing Magnet Door	Silicon Packing Magnet Door
inner door		Tempered Safety Glass Door	Tempered Safety Glass Door	Tempered Safety Glass Door
Operating panel		Touch Button	Touch Button	Touch Button
Display		LED Display	LED Display	LED Display
Air flow		Forced Air convection	Direct Heating	Forced Air convection
Chamber material		Stainless Steel (430)	Stainless Steel (430)	Stainless Steel (430)
Chamber volume		42 liter	42 liter	179 liter
Shelves material		Stainless Steel (430)	Stainless Steel (430)	Stainless Steel (430)
Number of shelves		2ea	2ea	3ea
Chamber dimension		320(W)x350(D)x370(H)mm	320(W)x350(D)x370(H)mm	475(W)x530(D)x713(H)mm
Overall dimension		408(W)x482(D)x550(H)mm	385(W)x488(D)x535(H)mm	560(W)x645(D)x940(H)mm
Power		110/220V, 50/60Hz, 350W	110/220V, 50/60Hz, 400W	110/220V, 50/60Hz, 400W
Weight		30kg	30kg	68kg

*In case of Peltier Incubator, the lowest set-up temperature is 17°C at less than 20°C ambient.

OPERATION



- 1 : TEMPERATURE DISPLAY
2 : TEMPERATURE ADJUSTMENT BUTTON

1. Temperature Setting

- Turn on the Power S/W at Right Side. Then, the LED screen will display the temperature in the chamber.
- Press the "SET" key, Then, the LED screen will flicker and display.
- Then, input the desired temperature by pushing UP (▲) and DOWN (▼).



Caution

In case of NB-201C, when setting lower temperature than ambient, turn Cool S/W on to activate cooling device (Peltier).



Caution

The Peltier(Cooling Device) is not effective to make temperature lower than 17°C. Hence, the minimum set-up temperature is 17°C when incubator is placed and used at 22°C or lower(Room Temperature).

- Press "SET" key again after putting the desired value. "SAVE" is shown up on the LED screen like below.



After set-up, the LED screen will stop flickering.

* If you don't press the "SET" key lastly after set-up, the new set-up value will not be saved at all.



Caution

Do not turn Cool S/W on when temperature is set more than + 5°C from ambient.

2. Safety Thermostat



This is the safety device which prevents overheating caused by the product's malfunction.

Please set the temperature at least 5 ~ 10°C higher than set temperature.



- Using at a high temperature: Set SAFETY dial at higher than the set temperature.
- e.g.) If you use the setting temperature 37°C, set SAFETY S/W more than about 42°C. You can identify its activation point by lighting of pilot lamp. At set point, turn the safety dial and recognize its deviation. Considering the deviation, set the safety 5°C higher than set point.
- It is set at 42°C when the product is released from the factory, but it may be changed during transportation of the product, so please check it.
- SAFETY S/W is the safety device that prevents over-heating caused by malfunction of temperature control.



Caution

When the SAFETY S/W is activated with visual alarm on pilot lamp(marked with safety), safe thermostat cut the heater automatically to prevent overheating.

If temperature is not able to reach to set value, please check the safety dial is properly set.
(at least 5°C higher than set value).

3. Service Contact

If you need technical service support, please contact your local dealer or international sales team of N-BIOTEK.

N-BIOTEK, Inc.

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