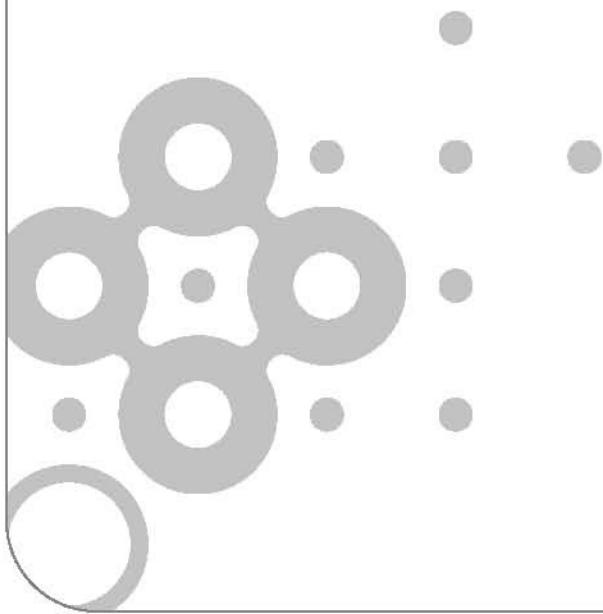


OPERATING MANUAL

WATER BATH

MODEL : NB-301, NB-301L



WATER BATH OPERATION MANUAL

General Information on 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 means like this.



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

Warning



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

Caution

- Other marks



Warning



Caution



Compliance



Prohibition



No
disassembly



Remove
plug



Ground

1. Precaution to connect the power cable

Warning



You have to use the product under specified electrical conditions.

Compliance (If you use the product 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.

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



The power outlet must be only for this product.

Compliance (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.)

-  **Prohibition** Do not bend the power cable hardly and do not make it to be pressed by heavy products.(When it is damaged, it can cause a fire.)

-  **Prohibition** Do not touch the power code with wet hands.(It can cause an electric shock.)

-  **Prohibition** Do not use the damaged power code and outlet.
(It can cause an electric shock and a fire.)

-  **Remove plug** When you see smoke comes out from the product or smell something is burning or see any other strange symptoms, you have to pull out the power code and stop using it. (It can cause an electric shock and a fire.)

2. Precaution for installation

Warning

-  **Compliance** 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.)

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

-  **Prohibition** 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 indoor temperature is 20°C ~ 30°C.)

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

-  **Compliance** When you install the product, you have to put the distance of more than 20cm from the wall.

-  **Compliance** Install at a flat and solid ground.
(If the ground is not flat, it can cause a vibration of the product.)

-  **Prohibition** When you move the product, do not lay down to its side or reverse the head to bottom. (It can cause the malfunction.)



Compliance

When you move the product, hold the door and other movable parts of the product with a tape.

(When the product is moved, the movable door can cause injury of you and damage of the product.)



Compliance

When you move the product, you must hold up the product.

(Pushing or pulling the product can damage the bottom part of the product.)

3. Precaution for use

Warning



No disassembly

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)



Prohibition

Do not use the product for different purpose.

(It can cause malfunction or poor function. Consequently, it can cause a wrong result.)



Prohibition

Do not use an inflammable spray near the product.

(The switch and other electric connection parts can cause a fire.)



Prohibition

When you use inflammable substances such as benzene, thinner, alcohol and LP gas, please be careful .(It can cause a fire and an explosion.)



Compliance

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 cloth. (It can cause an electric leakage and a fire.)



Compliance

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.)

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

 **Compliance** 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.)

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

 **Compliance** 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

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

 **Compliance** 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.

 **Prohibition** 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.

 **Compliance** 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.

The Feature & Specification of WATER BATH

1. Features

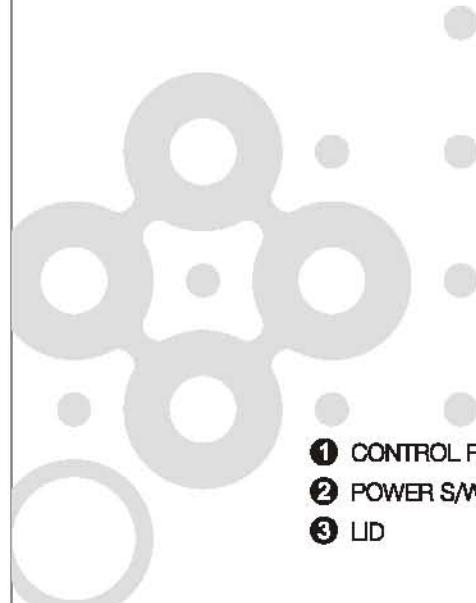
- Artificial intelligence system (NB TAC Sys) which maintains precise thermostatic condition is controlled by MICOM
- High Temperature humanity and details by intelligent thermostat even though in the case of no water circulation
- The heater for chamber is located outside bottom of water chamber, not inside chamber
- LED indicates temperature, speed, time and state of power failure.
- Convenient water level adjustment with level scale in chamber

2. Specification

Items	Unit	NB-301	NB-301L
Temperature			
range	°C	Ambient +5°C to 99°C	Ambient +5°C to 99°C
accuracy	°C	±0.5°C at 37°C	±0.5°C at 37°C
controller	°C	Microprocessor Digital PID	Microprocessor Digital PID
Bath capacity	liter	Max 10 liter Level 6.5 liter	Max 20 liter Level 13 liter
Dimensions	mm		
in	mm	240(W)x300(D)x150(H)mm	500(W)x290(D)x150(H)mm
out	V/Hz	270(W)x345(D)x225(H)mm	555(W)x390(D)x230(H)mm
Power	kg	110/220V, 50/60Hz, 300W	110/220V, 50/60Hz, 600W
Weight		7kg	14kg

WATER BATH OPERATION MANUAL

3. Configuration



- ① CONTROL PANEL
- ② POWER S/W
- ③ LID

4. CONTROL PANEL



- UP(▲), DOWN(▼): Button for adjusting temperature
- SET: Button for Set-up and Save temperature
- HEAT PILOT LAMP: Display to show heating
- DISPLAY LED

WATER BATH OPERATION MANUAL

5. Operation

- 1) Place the Power switch "ON" position which locate in rear panel (Left side).

The digital readout will display as below.



(a) temperature display



(b) RPM and time display

* Present temperature in the chamber type.

* Above message is Controller display

- 2) Temperature Set-up



TEMPERATURE RANGE IS +5°C to 100°C

After 30minutes from turning on s/w, heating is started.



- (1) Place the Power switch "ON" position which locate in right side.

Then, LED screen will displayed present temperature in the chamber.

- (2) Press the "SET" key, than LED screen displayed Saved temperature and flicker continually.

- (3) Then, you can set-up the new temperature using UP (▲) and DOWN (▼) key as desired set-point temperature.

- (4) Press "SET" key again after set up the new temperature as desired set-point temperature, than LED screen will be stop to flicker and saved as new temperature. After 30 Second, heating is started.

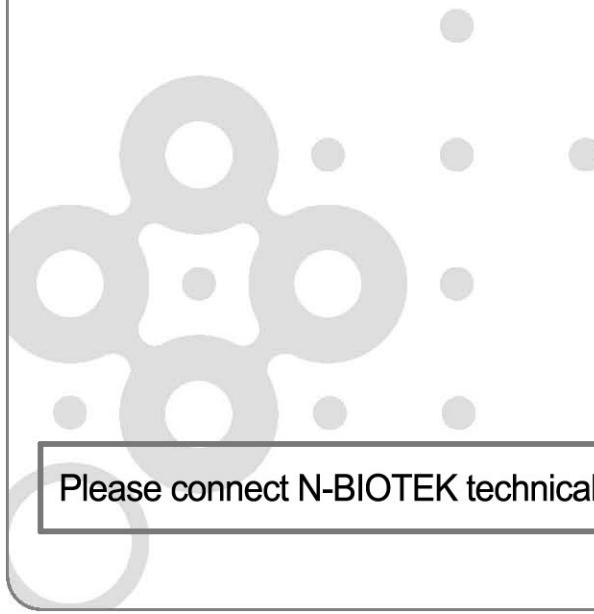
WATER BATH OPERATION MANUAL

- * If you don't press "SET" key after set up the new temperature, new set-up temperature will not save at all.
- * Set-up Temperature range are Ambient +5°C to 100°C
- * Appropriate water level is 2/3(If water level is low, the temperature is able to be not exact.



Compliance

If user do not need to use heating function , set temperature below ambient



Please connect N-BIOTEK technical service or your local retailer for any enquires and A/S issue.