

**BAÑO DE BLOQUE NAHITA BLUE MODELO MINI T  
NAHITA BLUE THERMOBLOCK MODEL MINI T  
THERMOBLOCK NAHITA BLUE MODÈLE MINI T**

REF. - CODE - RÉF. JDS001



Este manual es parte inseparable del aparato por lo que debe estar disponible a todos los usuarios del equipo. Le recomendamos leer atentamente el presente manual y seguir rigurosamente los procedimientos de uso para obtener las máximas prestaciones y una mayor duración del mismo.

*This manual should be available for all users of these equipments. To get the best results and a higher duration of this equipment it is advisable to read carefully this manual and follow the processes of use.*

*Ce manuel est une partie indissociable de l'appareil et doit être mis à la disposition de tous les utilisateurs de l'équipement. Nous vous recommandons de lire attentivement ce manuel et de suivre scrupuleusement les procédures d'utilisation afin d'obtenir des performances maximales et une plus longue durée de vie de l'appareil.*

**LANGUAGE INDEX**

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**1. SAFETY PRECAUTIONS**

- It is prohibited to plug and unplug the power plug and toggle the power switch and panel buttons when hands are wet.
- It is forbidden to plug and unplug the power plug when the instrument is powered on.
- It is forbidden to maintain and scrub the instrument when it is powered on.
- It is prohibited to conduct high-temperature heating operations when the sample capacity exceeds 70% of the test tube capacity.
- It is prohibited to install the instrument on the uneven, shaking and vibrating worktable.
- It is forbidden to touch the test tube module by hand when the instrument is in a high temperature state.

## 2. PRODUCT DESCRIPTION

Mini T thermoblock is a tabletop device integrating precise temperature control and high-quality design. Test tube modules are available in a variety of options to meet the needs of various experiments.

Basic use: sample thermostatic control, heating the liquid in the test tube to boiling.

Life sciences: cell digestion, DNA/RNA extraction, heating in vitro DNA/RNA/protein samples, in vitro culture and digestion, DNA extraction in PCR real-time analysis, denaturation of nucleic acid and protein samples.

Industry: dissolution for chemical oxygen demand analysis, soil dissolution, constant temperature.

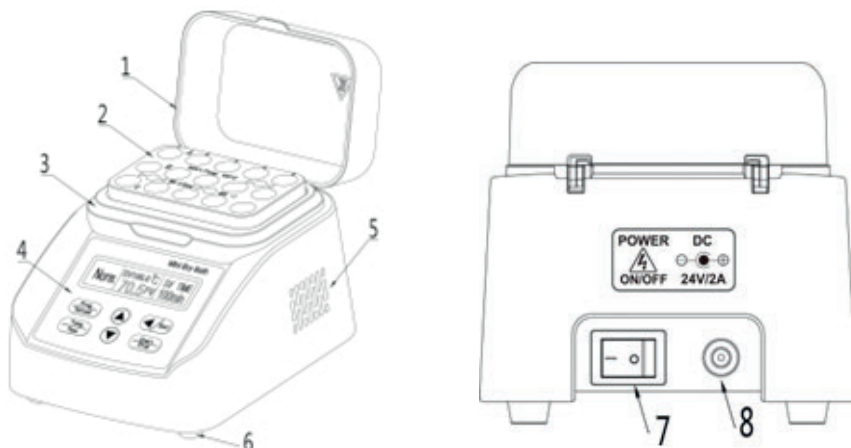
Biopharmaceutical industry: melting point determination.

Clinical analyses: acyl carnitine derivative, MRSA and pbp2 latex test, heating / washing during egg resuscitation, constant temperature control during egg collection.

## 3. TECHNICAL PARAMETERS

Temperature setting range	0 °C - 100 °C
Temperature control range	RT+5 °C-100 °C
Temperature stability at 37 °C	±0.3 °C
Temperature uniformity at 37 °C	±0.3 °C
Setting accuracy	0.1 °C
Display accuracy	0.1 °C
Control accuracy	±0.3 °C
Display type	OLED
Heating rate	25 °C -37 °C ≤ 4min ; 25 °C - 100 °C ≤15min
Cooling mode	Fan cooling
Time setting	1-999 sec / 1-999 min / HOLD
Dimension (LxWxH)	114×140×107 mm
Net weight	0.8 kg
Input power supply	DC24V
Power	48 W
Security	Over temperature automatically disconnects the power supply and alarms.

## 4. APPEARANCE



1. Transparent insulation cover.
2. Test tube module.
3. Housing.
4. Operation panel and display.
5. Ventilation holes.
6. Nonslip foot.
7. Power switch.
8. DC24V power input socket.

## 5. OPERATION INSTRUCTIONS

### 5.1 Cover opening / closing

Cover opening: the transparent insulation cover can be easily opened by turning it back.

Cover closing: the transparent insulation cover can be easily closed by turning it forward.

### 5.2 Power on/off

When the power switch is turned to the “I” position, the power is turned on, and when it is turned to the “O” position, the power is turned off.

### 5.3 Operation panel key description



1. Composite key: switch the custom program storage / general operation mode (Prog/Normal). Custom program storage: a total of 10 groups of custom parameters from P.01 to P.10 are stored for the convenience of different user experiments.

2. Composite key: switch temperature parameters / time parameters (temp / time).

3. Composite key: increase the set parameter value / self-tuning temperature control parameter (long press this key for about 5 seconds in standby mode to enter or exit this function).

4. Lower the set parameter value.

5. Composite key: start / stop.

6. Composite key: parameter shift key / specific parameter mode (press and hold this key for about 5 seconds in standby mode to enter or exit this function).

### 5.4 Start / Stop the instrument

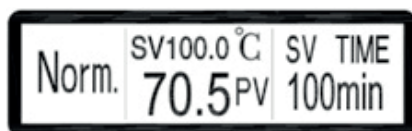
Open the transparent insulation cover → place the test tubes on the corresponding test tube module → turn on the power supply → close the transparent insulation cover.

Example: if the temperature is set to 100 °C and the time is set to 100 minutes under normal mode of operation, proceed as follows:

Press key, the display area flashes Norm.; press key, SV (set temperature) flashes, press shift key to quickly adjust the corresponding hexadecimal units, press to adjust the value to 100.

Press key, SV TIME (set time) flashes, press shift key to quickly adjust the corresponding hexadecimal unit, press to adjust the value to 100. At this time, the system flashes 3 times and automatically saves the setting.

After setting, the screen shows



Press to start. The machine will stop according to the set time mode; buzzer alarm prompt when work is completed. If you need to interrupt the operation you can press to stop.



## How to perform AT self-tuning

When the instrument is started for the first time, the AT self-tuning can be carried out due to the change of the operating environment or the unsatisfactory temperature control effect. The instrument will be set according to the current situation of the controlled system at this time.

A set of optimal PID parameter values is obtained\*\*\* This feature is recommended\*\*\*

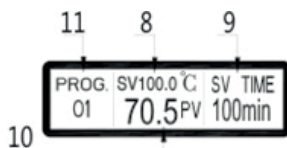
Example: it can be executed in normal mode or prog mode; in standby mode, set the target value of 100 °C.

\*\*\*Make sure the transparent insulation cover is closed\*\*\*

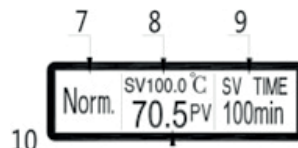
Long press  more than 5 seconds. The AT code will be displayed on the screen. At this time, release the key, and the system will automatically run. During the setting process, the stability is high, but the setting time is long. After the setting, the system will automatically exit the function, AT code disappears; at this point, you can press and hold . Enter the temperature control parameters and operation mode menu for more than 5 seconds to view the P, I and D parameter values after self-tuning (the parameters at this time cannot be changed).



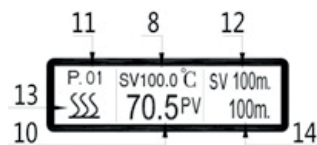
### 5.5 Description of display interface



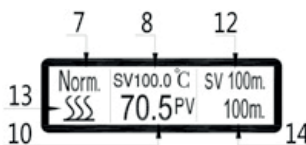
PROG mode standby mode display



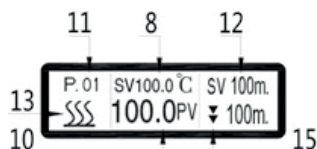
Normal mode standby mode display



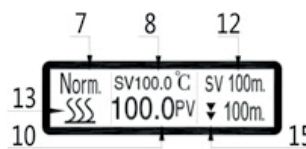
PROG mode temperature rise status



Normal mode temperature rise status



PROG constant temperature countdown status



Normal constant temperature countdown status

Description:

7. Normal general operation mode display area
8. Set temperature display area
9. Set time display area in standby mode
10. Display area of actual measured temperature
11. PROG display area of program storage mode
12. Set time display area in the heating state
13. Heating status display area
14. Display area of actual time waiting mode in heating state
15. Display area for countdown status of constant temperature reaching the set time
16. HOLD time hold status display area

### 5.6 Operating instructions for HOLD mode (continuous functioning)



Description:

Press SV TIME. Set the time bar number to flash. At this time, you can press key, shifts left to the third digit flashing, press again . Adjust the value to HOLD. At this time, the system flashes 3 times and defaults automatically.

### 5.7 Temperature calibration

■ The temperature of the instrument has been calibrated before leaving the factory. The default display temperature of the instrument is the temperature of the test tube module. To display the liquid temperature in the test tube, please refer to the following instructions for calibration:

If there is a deviation between the actual temperature and the instrument display temperature due to some reasons, the calibration function can be used to correct the temperature deviation.

The instrument adopts pb/ temperature zero calibration and pk/ temperature full calibration methods; (see specific parameter list for calibration range).

■ Select a thermometer with an accuracy of 0.1 °C that has passed the measurement and detection and put it into the liquid or test tube module to set the target temperature to be reached. When the temperature is reached, it must be kept constant for 3-5 minutes to read and record the actual temperature in the currently measured liquid or test tube module and the instrument display temperature.

**Pb= actual temperature - instrument display temperature; adjustment range -5.0~5.0 °C.**

**PK=1000 × (actual temperature - instrument display temperature) / instrument display temperature; adjustment range -999~999.**

Press to stop heating at constant temperature. Press and hold for more than 5 seconds to enter the specific parameter list. Select Pb and PK values for calibration correction. Long press and hold to exit in more than 5 seconds.

#### ■ Specific parameter setting

In standby mode, long press and hold for more than 5 seconds to enter or exit specific parameter list.

These three keys are used to adjust the corresponding value.

## 6. MAINTENANCE

Do not try to clean the thermoblock when the power cord is plugged in, or the power switch is on. If the equipment or accessories are contaminated by pathogenic, toxic or radioactive substances, it is the user's responsibility to properly purify them, which shall be explained when formulating the "laboratory biosafety manual". If there are other requirements for cleaning and decontamination other than those mentioned in this chapter, please contact our company to check whether they may damage the equipment. If you plan to return the equipment or accessories to our company or require maintenance, you must ensure that the equipment or accessories are clean and harmless to the human body.

Do not use organic solvents because they can decompose the shell and key parts; During the cleaning process, do not let liquids come into contact with the inside of the machine.

- Regularly check the test tube module components (especially the bottom of the test tube hole) for corrosion spots, grooves and small cracks. If any of the above conditions are found, please stop using them and contact your distributor.
- When cleaning the test tube module, please wet the sponge or cotton cloth with neutral detergent, and then wash the detergent with distilled water. Allow to dry upside down after cleaning.
- Check the transparent insulation cover can be opened and closed smoothly.
- Carefully wipe the instrument surface with a soft cloth stained with neutral detergent, and then remove the detergent with a clean wet cloth.
- If the instrument has major problems, such as there is no heating under normal conditions or there is a burning smell inside the machine, please contact the dealer authorized by the supplier in time, and do not repair it by yourself.

## 7. TROUBLESHOOTING

**In case of abnormality, turn off the power supply first, unplug the plug, and start the thermoblock after troubleshooting.**

The following table lists the relevant instrument failure phenomena, relevant failure causes and handling methods, which you can eliminate according to the prompts. If the user still cannot eliminate the fault after trying or the fault phenomenon is not included in the following list, the user should immediately contact the distributor.

## Fault codes

Fault code	Code meaning	Reason	Countermeasures
E-1	Temperature measurement fault in standby mode	Poor contact or damage of temperature sensor. Board temperature measurement circuit fault.	Rewiring to make the wiring contact well or replace the temperature sensor.
E-2	Temperature measurement fault in operating state	ditto	ditto
E-3 ALM	Overtemperature protection. After entering the over temperature stable state, the measured temperature exceeds the set temperature by more than 5 degrees.	PID parameters are inappropriate. Control output is not controlled.	Perform PID self-tuning again.

## Fault phenomena, causes and troubleshooting

Fault phenomenon	Fault causes and troubleshooting
Device does not display	<ol style="list-style-type: none"> <li>1. Check whether the power socket and wiring are in good condition and whether the power socket is powered.</li> <li>2. Whether the power switch is in poor contact.</li> <li>3. If the problem cannot be solved, please contact the supplier's technical service.</li> </ol>
No response of operation panel buttons	Please contact the supplier's technical service.