lbx instruments

WB-Pro Water Bath

Please read the User Manual carefully before use, and follow all operating and safety instructions!

user manual

english

User Manual

EN

WB-Pro Water Bath

Preface

Thank you for purchasing our Water Bath. Users should read this manual carefully, follow the instructions and procedures, and beware of all the preventive measures when using this instrument.

Service

If help is needed, you can always contact your dealer or Labbox via www.labbox.com

Please, provide the customer service representative with the following information:

- Serial number (on the back side)
- Description of the problem
- Your contact information

Warranty

This instrument is guaranteed to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts that have been damaged due to improper installation, improper connections, misuse, accident or abnormal conditions of operation. For claim under the warranty, please contact your supplier.

Content

1. SAFETY INSTRUCTIONS

Read the operating instructions in full before starting up andfollow the safety instructions.

- Socket must be earthed (protective ground contact) before use.
- Water must be filled into the chamber before power-on.
- Avoid operating the bath without water.
- The symbols below are marked on the equipment and in thismanual to indicate:


Caution: Surfaces can be hot during and after use


Caution: Socket must be earthed (protective ground contact).

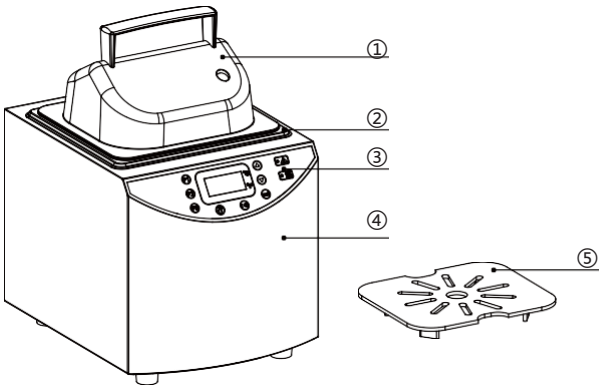
2. UNPACKING

Please unpack the device carefully and check it for damage. Itis important that any transport damage is detected when the device is unpacked. If necessary, any inventory of the damage should be made immediately (postal service, railway, haulage company).

Delivery scope

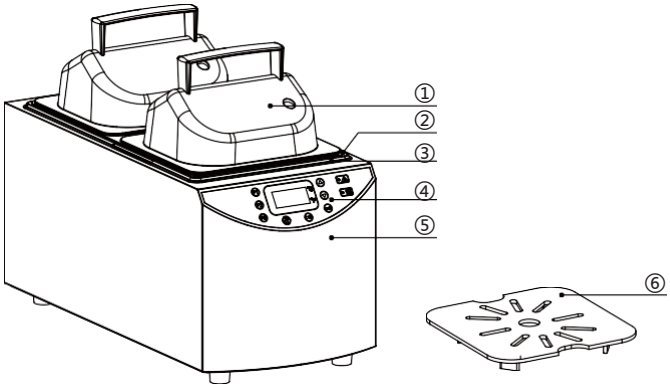
Model	**I: TWBE-001-001**	**II: TWBE-002-001**
Water bath	1	1
Cover board	/	1
Transparent lid	1	2
Base tray	1	1
Power cable	1	1
Operating manual	1	1

Model I:



① Transparent lid ② Stainless-steel chamber ③ LED display
④ Water bath ⑤ Base tray

Model II:



① Transparent lid ② Cover board ③ Stainless-steel chamber
④ LED display ⑤ Water bath ⑥ Base tray

3. INSTALLATION

3.1 Assembly of the equipment and components

The water bath has three main components, the bath, the lid and the base tray. The base tray fits into the bath with the feetdownward so that it creates a gap between the bottom of the chamber and the tray.

Note:

1. For optimum temperature stability, avoid allowing the base tray and sample container to touch the sides of the chamberwhile operating.
2. The lid should only be lifted by the handle, as other parts canbecome hot during use. It has a vent/thermometer hole–this hole should not besealed as pressure could build up inside the bath.

3.2 Instrument placement

Place the water bath on a level, non-combustible surface. Ensure that the main plug and the switch are easily accessible.

3.3 Electrical supply

- Check that the supply voltage marked on the serial number label, and the type of mains plug, are correct for your mainssupply outlet, which must have a ground connection.
- To disconnect the equipment from the mains supply, removethe mains plug from the mains supply outlet.

4. CORRECT USE

4.1 Avoid operating the bath without water

- Avoid using your bath without water in the chamber. Dry-start will affect the service life of the key component.
- The bath has an inbuilt protection mechanism known as dry start protection which will detect this condition in most circumstances and prevent the bath from continuing to heat. In this instance the bath will display " dry " and sound an alarm. If the protection program fails to detect the dry-heating, built-in safety temperature cut-out switch will cut off the heating to protect the water bath when heated to a certain temperature.

Note:

The dry-start protection program is on by default. If you need to turn it off, please refer to **5.8. Setting the dry-start protection alarm**.The chamber internal surface can become very hot if an accidental dry start has occurred, even if the dry start cut out has operated. Avoid touching the chamber until it has been leftto cool.

4.2 Emptying the baths

Before emptying any bath, disconnect the device from the powersupply and pull out the plug. Then allow the water temperature to fall to a safe level and take reasonable precautions to preventaccidental spillage.

4.3 Using transparent lid

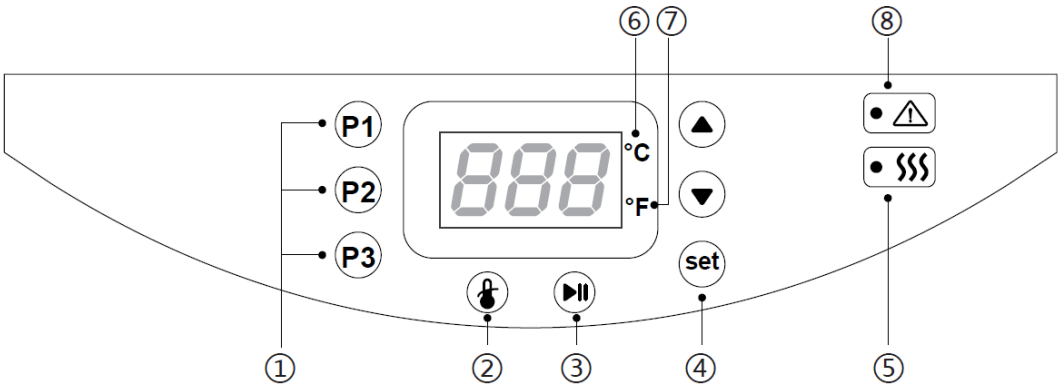
- When the setting temperature is above 60°C , use the lid to maintain proper temperature control and ensure that the watertemperature reaches the set point.
- The lid will also prevent excessive evaporation that requires the bath to be filled more often and will save energy.

4.4 Using base tray

- Using the base tray can improve temperature control inside containers.
- Don't put the containers or other items into the stainless-steel chamber directly. Avoid the containers or other items direct contact with the inside walls of chamber.

5. OPERATION

5.1 Bath controls



① Preset program ② Over-temperature alarm key ③ Run/Stop
④ Set ⑤ Heating indicator ⑥ ℃ indicator ⑦ °F indicator
⑧ Alarm indicator

5.2 Run/Stop

When it is displayed OFF, the water bath is in unheated status. When it displays the actual temperature, the water bath is in heating status.

Press ⏯ to switch run/stop heating

For example:

Operation	Display	
	OFF	The bath is in unheated status
⏯	50.0	Press the run/stop key to start heating, it displays the current temperature
⏯	OFF	Press the run/stop key again, heating stops, and screen displays "OFF"

5.3 Heating temperature setting

Method 1:

Directly press ▲ ▼ to enter the temperature setting asfollowing steps:

For example:

The current temperature is 37.0 °C, and set the temperature 50,0 °C

Operation	Display	
▲ ▼	50.0	Direct set the heating temperature you require
set	37.0	Press the set key to save the value then exit, it displays the current temperature/OFF

Method 2:

Press “set” to enter the temperature setting sub-menu to adjust the temperature as following steps:

For example:

The current temperature is 37.0 °C, and set the temperature to 50 °C

Operation	Display	
set	° C	Press set key to enter the first level menu
set	50.0	Press set key again to enter the temperature setting menu option
▲ ▼	55.0	Set the temperature you require
set	37.0	Press the set key to save the setting then exit, it displays the current temperature/OFF

Method 3:

Run the preset “P1”, “P2” or “P3”. Please see the detailed steps 5.4 for how to configure and run the presets.

5.4 Heating temperature setting

The bath has 3 presets: “P1”, “P2” and “P3”. Temperature presets allow you to conveniently store or run bath temperature settings for your routinely use.

Before you can use presets, you need to store the values you wish to use in at least one of the presets as the following procedures:

For example:

configuring the preset P1, the current temperature is 37.0 °C, preset the temperature to 50 °C.

Operation	Display	
P1	Pr1	Select the preset you wish to set
▲ ▼	50.0	Set the value you wish to use
P1	37.0	Press the preset again to store the value and the bath will automatically return to displaying the current temperature/OFF

Running the preset as the following procedures

For example, run the preset P1:

Operation	Display	
P1	Pr1	Press the preset you want to use
set	50.0	Press “set” to confirm the preset, it displays the current temperature/OFF

5.5 Switch between Fahrenheit Temperature (°F) and Celsius Temperature (°C)

When the °C indicator is on, the unit of temperature is °C; When the °F indicator is on, the unit of temperature is °F.

Setting procedures as following: For example: switch “°C” to “°F”.

Operation	Display	
set	°C	Select the menu option
▲ ▼	CFU	Navigate to the switching °C / °F selection menu option
set	C	Press the set key to enter °C / °F switching
▲ ▼	F	Switch to °F. C stands for °C, F stands for °F
set	37.0	Press the set key to save the setting, it displays the current temperature/OFF

5.6 Setting the over temperature alarm

Protect the sample by setting max. temperature that the bath allows to be heated.

The setting procedures are as following:

For example:

The current temperature is 37.0 °C and the over-temperature alarm limit is 90.0 °C

Operation	Display	
	0tP	Press the over-temperature alarm key to enter the setting menu
	90.0	Set the over-temperature alarm limit you require
	37.0	Press the over-temperature alarm key again to save the setting, it displays the current temperature/OFF

If the liquid temperature exceeds the setting over-temperature alarm limited temperature, the water bath will stop heating, display "OtA" and start an alarm. The alarm can be turned off by the following operations:

· Turn off the power, the alarm is turned off, and restart the machine after the water temperature is lower than the over-temperature alarm limited temperature;

· Add some cold water until the water temperature drops below the over-temperature alarm limited temperature, and the alarm will be turned off;

· Set the over-temperature alarm limited temperature to above the water temperature, and the alarm will be turned off.

5.7 Setting the countdown timer

The countdown timer range is 1~999 min

After the countdown is over, an alarm will sound three times and the heating will stop, "OFF" is displayed.

Note:

1. When the countdown time is more than 10 minutes, the countdown time is hidden and the real-time temperature is displayed.
2. When the countdown time is less than 10 minutes, the countdown time is displayed.
3. The countdown can start only in heating state. The countdown will stop once the heating is stopped.
4. In heating state, save the setting value of timer, the countdown will start immediately.
5. In unheated state, save the setting value of timer, then press the "Run/Stop" to start countdown.
6. The countdown settings are independent of the temperature settings. When setting the countdown, take into account the time required to achieve the set temperature.

The countdown timer setting as following procedures: For example:

Set the countdown time from 0 to 10 min.

Operation	Display	
set	°C	Select the menu option
▲ ▼	Cdt	Navigate to the countdown timer selection menu option
set	OFF	Press set key to enter the countdown timer setting If the countdown time is 0, it displays OFF. If not, it displays the countdown timer value
▲ ▼	010.	Set the countdown time you require The "." In the lower right corner means that it is in countdown timer setting
set	9.57	Press set key to save the setting The countdown timer will begin once you save the setting The setting will exit automatically after 5S without operation

5.8 Setting the dry-start protection alarm

When the dry-start protection function is on, the bath will stop heating and an alarm will sound when the system detects that the inner chamber is in dry-start status. When the dry-start protection is off, there is no protection alarm and the bath will continueheating to the set temperature.

For example:
the current temperature is 37.0°C, set the dry-start protection from "ON" to "OFF";

Operation	Display	
set	°C	Select the menu option
▲ ▼	OPA	Select the dry-start protection setting menu option
set	On	Press set key to enter the dry-start protection setting. The default setting is "ON"
▲ ▼	OFF	Select to turn off the dry-start protection
set	37.0	Press set key to save the setting The setting will exit automatically after 5S without operation It displays the current temperature/OFF

Note: The dry-start protection mechanism works by heating up the bath a few degrees and checking the water level. If the set temperature is too close to the current water bath temperature and/or the water level is quite low, then the overshoot past the set temperature point will be quite high. To avoid such conditions, ensure the water level is at an adequate height of at least 38mm.

6. CALIBRATION

6.1 Calibration condition

1. The accuracy of the thermometer should be more than 10 times that of the water bath display.
2. At a stable ambient temperature (+/-1°C) without air convection.
3. Wait for the liquid to reach the calibration setting temperature and stabilize for 30 minutes before calibrating.

6.2 Dual point calibration

Due to the influence of ambient temperature, humidity, and pot structure, the water bath has a certain deviation in temperature measurement. In order to improve the measurement and control accuracy, each single instrument is calibrated before shipment. Includes two calibration options -- low temperature point and high temperature point.

Low temperature point: 30 ~ 40°C High temperature point: Above 55°C

Low temperature point calibration:

For example:

Before calibration, the screen displays 32.0°C but the actual liquid temperature is 37.0°C

After calibration, the screen displays 36.8 ºC and the actual liquid temperature is 37.0 ºC

Operation	Display	
set	°C	Select the menu option
▲ ▼	LCP	Select the low temperature point calibration setting menu option
set	32.0	Press set to enter the calibration value
▲ ▼	37.0	Enter the reference thermometer value
set	SET	Press set to store the calibration value The setting will exit automatically after 5S without operation
⧗	36.8	Leave the bath to stabilize and check the calibration

Temperature point calibration:

For example:

Before calibration, the screen displays 60°C but the actual liquid temperature is 65.0°C;

After calibration, the screen displays 64.7°C and the actual liquid temperature is 65.0°C;

Operation	Display	
set	°C	Select the menu option
▲ ▼	HCP	Select the high temperature point calibration setting menu option
set	60.0	Press set to enter the calibration value
▲ ▼	65.0	Enter the reference thermometer value
set	SET	Press set to store the calibration value The setting will exit automatically after 5S without operation
⧗	64.7	Leave the bath to stabilize and check the calibration

7. FAULTS

Symptom	Possible cause	Action required
SHt	Temperature sensor short-circuit	Have a competent person check the temperature sensor or motherboard for a short circuit fault.
OPn	Temperature sensor open-circuit	Check if the sensor is well contacted.
OtA	Over-temperature Alarm 1. The initial water temperature is above the OTP value 2. If the OTP setting value is too low	1. Let water cool. 2.Reset the OTP value.
dry	Dry-start alarm, no water in the chamber or the water is less than the Min.amount.	Switch the bath off and refill the bath with water

8. MAINTENANCE AND CLEANING

Correct use of the instrument to keep it in good working condition will help extend its service life. Disconnect the power supply before maintenance and cleaning. No routine maintenance is required except for cleaning. Clean the outside of the equipment with a damp cloth soaked in soap, dish washing liquid or alcohol. Wait for dry before continuing to use.
There are no user serviceable parts inside the unit.

9. TECHNICAL DATA

Model	**I: TWBE-001-001**	**II: TWBE-002-001**
Reservoir Capacity	2L	5L
Heating temperature range	Room T +5°C to 99°C	Room T +5°C to 99°C
Permissible ambient temperature	10-35°C	10-35°C
Over Temperature Cut-off	Yes	Yes
Temperature stability	±0.5°C	±0.5°C
Display resolution	0.1°C	0.1°C
Temperature uniformity	±0.5°C	±0.5°C
Temperature setting increment	0.1°C	0.1°C
Temperature display	LED	LED
Time display	LED	LED
Dry-start protection	Yes	Yes
Dimensions (W x D x H) (incl. cover)	188 x 232 x 285mm	188 x 394 x 285mm
Chamber dimensions (W x D x H)	150 x 138 x 150mm	150 x 300 x 150mm
Weight	3 kg	4.5 kg
Voltage	200-240V 50Hz	200-240V 50Hz
Power input	200W	450W

Nota importante para los aparatos electrónicos vendidos en España

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:

Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden ser eliminados en forma de residuos urbanos.

De conformidad con la Directiva 2012/19/UE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la posibilidad de devolver sus RAEE para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

Remarque importante pour les appareils électroniques vendus en France

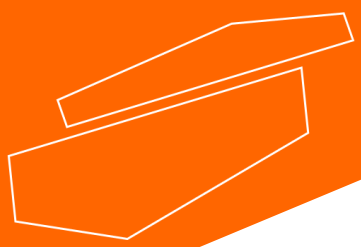
Informations sur la protection du milieu environnemental et élimination des déchets électroniques :

Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.
En réponse à la règlementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de ecosystem dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur www.ecosystem.eco).
L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

Nota importante per le apparecchiature elettroniche vendute in Italia

Istruzioni sulla protezione ambientale e sullo smaltimento dei dispositivi elettronici:

Le apparecchiature elettriche ed elettroniche contrassegnate con questo simbolo non possono essere smaltite come rifiuti urbani.
In conformità con la Direttiva 2012/19 / UE, gli utenti dell'Unione Europea di apparecchiature elettriche ed elettroniche hanno la possibilità di restituire i propri RAEE per lo smaltimento al distributore o al produttore di apparecchiature dopo averne acquistato uno nuovo. La rimozione illegale di apparecchiature elettriche ed elettroniche è punibile con una sanzione amministrativa.



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