WATER BATHS

User's Manual



Natural convection and forced circulation **waterbath** with microprocessor temperature control.

Model	Description	Temperature range
WB-5	*Natural convection waterbath 5L (usable volume)*	*From + 5°C above room temperature to +100°C*
WB-12	*Natural convection waterbath 12L (usable volume)*	*From + 5°C above room temperature to +100°C*
WB-22	*Natural convection waterbath 22L (usable volume)*	*From + 5°C above room temperature to +100°C*
WB-22 Pump	*Forced circulation waterbath 22L (useful volume)*	*From + 5°C above room temperature to +85°C*
WB-40 Pump	*Forced circulation waterbath 40L (useful volume)*	*From + 5°C above room temperature to +85°C*

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Summary

1. Security Information 3
   - Definitions of warning words and symbols 3
   - Reporting deadlines 3
   - Warning symbols 3
   - Pictograms 3
   - Danger Symbols 4
   - Prohibition symbols 4
   - Symbols of obligation 4
2. General safety instructions 5
3. CE marking data 7
4. Equipment 8
5. Transport 8
   - Instructions for safe transport 8
6. Conservation 9
7. First Installation 9
   - Preliminary Operations 9
8. Instrument parts 10
9. Technical Specifications 11
10. Filling the tank 12
11. Emptying the tank 13
12. Operation 14
   - Switching on the instrument 14
   - Turning on/off of recirculation pump (where fitted) 14
   - Setting Parameters 14
   - Starting and stopping the heating cycle 15
13. Access to submenus with password 15
   - Delay start function – (dy) 15
   - Temperature limit for sample protection - (tm) 16
   - Restart mode after power failure - (Po) 16
   - Temperature limit for over-temperature alarm - (AL) 16
14. Temperature Offset - Calibration 17
15. Cleaning and Maintenance 18
16. Troubleshooting 19
17. Shipping in Technical Assistance 22
18. Warranty 22
19. Disposal of electronic equipment 22

1.Security Information

Definitions of warning words and symbols

The safety information in this manual is essential in order to avoid personal injury, damage to the instrument, malfunctions or incorrect results resulting from failure to follow the instructions. It is essential to read the entire manual carefully and become familiar with the instrument before using it. The manual should be kept close to the instrument so that the operator can easily consult it if necessary. Safety warnings are expressed through warning terms or symbols.

Reporting deadlines

ATTENTION / WARNING / DANGER	For a hazardous situation that could lead to minor or moderate injury, serious injury or death if not avoided.
NOTICE	For important product information.
NOTES	For useful information.

Warning symbols



DANGER

This symbol indicates an **imminently hazardous** situation which, if not avoided, may result in death or serious (irreversible) injury.



WARNING

This symbol indicates a potentially dangerous situation which, if not avoided, may result in death or serious (irreversible) injury.



ATTENTION

This symbol indicates a potentially dangerous situation which, if not avoided, may result in minor or moderate (reversible) injury.

NOTICE

This symbol draws attention to possible damage to the instrument or instrumental parts.



NOTES

This symbol identifies useful product information.



Pictograms

Within this manual there are different symbols identifying dangers, prohibitions and obligations as illustrated below.

Danger Symbols

	**Danger of electric shock**
	**Danger of explosion**
	**Fire hazard**
	**Danger of poisoning**
	**Danger of overheating surfaces**
	**Danger of damage to health caused by toxic substances**
	**Risk of injury from tipping objects**
	**Risk of injury from lifting heavy objects**
	**Danger of environmental damage**
	**Danger of corrosion**

Prohibition symbols

	**Do not wet with water**

Symbols of obligation

	**Disconnect the instrument from the power supply by pulling the plug**
	**Eye protection must be used**

2.General safety instructions

Installation, commissioning, cleaning, adjustment or calibration of the waterbath, if carried out incorrectly, can lead to a risk of malfunctioning, resulting in personal injury and material damage to the instrument and samples. For this reason, all such operations should only be carried out by qualified personnel.

<table>
<tr><td colspan="2">DANGER</td></tr>
<tr><td>

</td><td>Danger of electric shock and Danger of death
⃠ Do not get the instrument wet during installation, commissioning or maintenance.

⃠ Do not connect the instrument to the power supply if the rear panel is dented or damaged.

➢ Before opening the rear panel, remove the plug from the power supply.
➢ If the power cable or the rear panel of the instrument is damaged, stop using it immediately, unplug it from the power supply and contact your dealer for the necessary repairs.

➢ All work on the electrical components of the instrument must only be carried out by qualified personnel.</td></tr>
<tr><td></td><td>Danger of explosion
➢ Only install the instrument where there is no risk of explosion.

⃠ Do not keep air/solvent mixtures or explosive dusts nearby.
⃠ Never introduce materials into the instrument that are explosive or flammable at the selected operating temperature.
⃠ Never introduce materials containing flammable or explosive solvents into the instrument.
⃠ Never introduce materials into the instrument which, by sublimation or pyrolysis, give rise to the formation of flammable materials at working temperature selected.</td></tr>
<tr><td>
</td><td>Danger of Poisoning and Danger of Death
⃠ Never introduce materials into the instrument whose disintegration could result in the formation of poisonous gases at the selected operating temperatures.</td></tr>
</table>

WARNING	
	**Fire hazard** ⃠ The stoves/incubators must not be used if the class2 safety thermostat has failed. ➢ If the safety thermostat check fails, stop using the waterbath immediately, unplug it from the power supply and contact your dealer for the necessary repairs. ➢ Always place the instrument on a work surface that is resistant up to a temperature of 100 °C. ⃠ Do not put anything under the instrument (paper, plastic film, etc.). ➢ Always connect the instrument only to a fused power supply of at least 10A. Follow the recommendations of your local power supply company electrical.

ATTENTION	
	**Danger of burns** ➢ The air intake cover on the back of the instrument gets hot and must not be touched during operation of the stove.
	**Risk of injury and Danger of breakage** ➢ Always place the instrument only on surfaces that can support its weight.
	**Tipping hazard and Risk of injury** ⃠ Never stack waterbaths. ➢ Always secure the 2 stacked stoves with the fixing plates supplied.
	**Risk of injury, Risk of slipping or tipping the instrument and Risk of damage to the instrument** ➢ The instrument must be lifted by 2 persons. ➢ The instrument must only be transported in its original packaging. ➢ The instrument must always be lifted from below with mechanical tools (e.g. forklift truck) together with the supporting pallet. ⃠ The instrument must not be lifted directly from below with mechanical tools without supporting pallets (e.g. forklift truck). ⃠ The instrument must not be lifted or dragged by pulling the door.

3.CE marking data

ArgoLab instruments are designed and manufactured in accordance with Directive 2006/42/EC and other relevant EU Directives applicable at the time they are placed on the market (see facsimile below).

SUZHOU BEING MEDICAL DEVICE.CO.,LTD	**DECLARATION OF CONFORMITY UE** In accordance with Annex II A - Directive 2006/42/CE Annex IV - EMC Directive and Annex VI - Directive 2011/65/UE (RoHS)	CE

No. ISETC.002420200624

Manufacturer's Name : SUZHOU BEING MEDICAL DEVICE CO., LTD

Manufacturer's Address : NO. 108 GONGXIANG RD QIANDEN[illegible] TOWN, KUNSHAN CHINA

Object of Declaration: : FORCED AIR INCUBATORS

This declaration of conformity is issued under the sole responsibi[illegible] the manufacturer.

Product names:

Product description FORCED AIR INCUBAT[illegible]S

Model: BI-120FL, BI-120F, BI-[illegible]FL, BI-[illegible]0F, BI-400FL, BI-400F

Serial Number: from s/n xxx[illegible]xxxx to xx[illegible]xxxxxxxx

Product options: This declaration [illegible]s all [illegible]tions of the above products

- ***The object of the declaration describe above complies with the essential requirements of the following applicable European Directives, and carries the CE marking accordingly:***

EMC directive: 2014/30/UE	*Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the [illegible]ization of the laws of the Member States relating to electromagnetic compatibility.*
RoHS Directive 2011/65/EU	*Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the [illegible]triction of the use of certain hazardous substances in electrical and electronic equipment.*
LVD Directive: 2014/35/UE	*Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the on the market of electrical equipment designed for use within certain voltage limits Text with EEA relevance.*
Machinery Directive : 2006/42/EC	*DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast)*

- ***and conforms with the following standards:***

EN 61010-1:2010+A1:2019

EN 61326-1:2013

EN 61000-3-2:2014

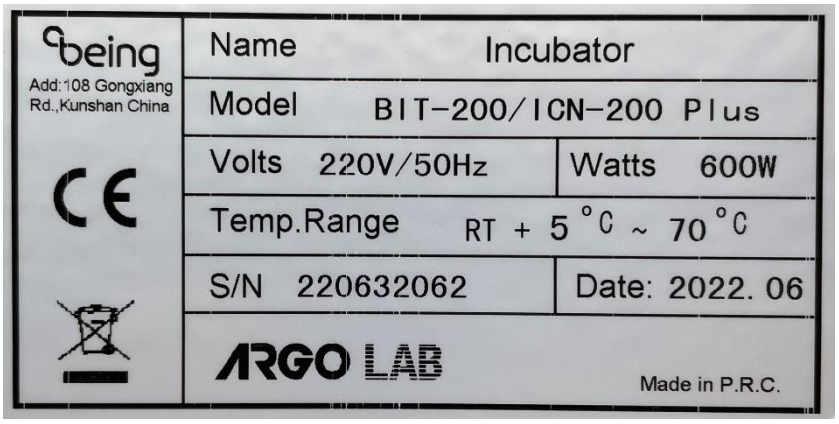
EN 61000-3-3:2013

EN 60204:2018

EN ISO 12100:2010

FAC-SIMILE

Facsimile of the CE marking plate:



4. Equipment

The instrument will be delivered complete with the following parts:

- Stainless steel bottom plate.
- Tank emptying kit with quick coupling
- Power cable.
- Fuses.
- Instruction manual.

5. Transport

Instructions for safe transport

ATTENTION	
  	**Risk of injury, Risk of slipping or tipping the instrument and Risk of damage to the instrument** ➢ The instrument must be lifted by 2 persons. ➢ The instrument must only be transported in its original packaging. ➢ The instrument must always be lifted from below with mechanical tools (e.g. forklift truck) together with the supporting pallet. ⃠ The instrument must not be lifted directly from below with mechanical tools (e.g. forklift truck) without the supporting pallet. ⃠ The instrument must not be lifted or dragged by pulling the door.

Transport of an already used water bath

- Switch off the ArgoLab thermostatic bath using the main switch.
- Disconnect the power cable by removing the plug from the power socket.
- Remove the bottom plate from the tank.
- Thoroughly clean the ArgoLab thermostat bath and bottom plate (see Chapter 16 for cleaning instructions).
- Completely dry the inside of the tank, the bottom plate and the drain kit.
- Protect accessories (bottom plate, emptying kit and power cable) by wrapping them in bubble wrap or other material and placing them inside the tank.
- Pack the thermostatic bath using the original packaging or a different one of adequate strength, ensuring that it is well protected.
- Avoid contact with water during transport to prevent damage.
- Maintain the permissible ambient temperature during transport (between -10 °C and +60 °C).

6. Conservation

- Store the ArgoLab waterbath only in closed, dry rooms.
- The permissible storage temperature is 10 °C to 60 °C, and the maximum permissible storage humidity is 85% RH in the absence of condensation.

7. First Installation

Preliminary Operations

The water bath must be installed under the following conditions:

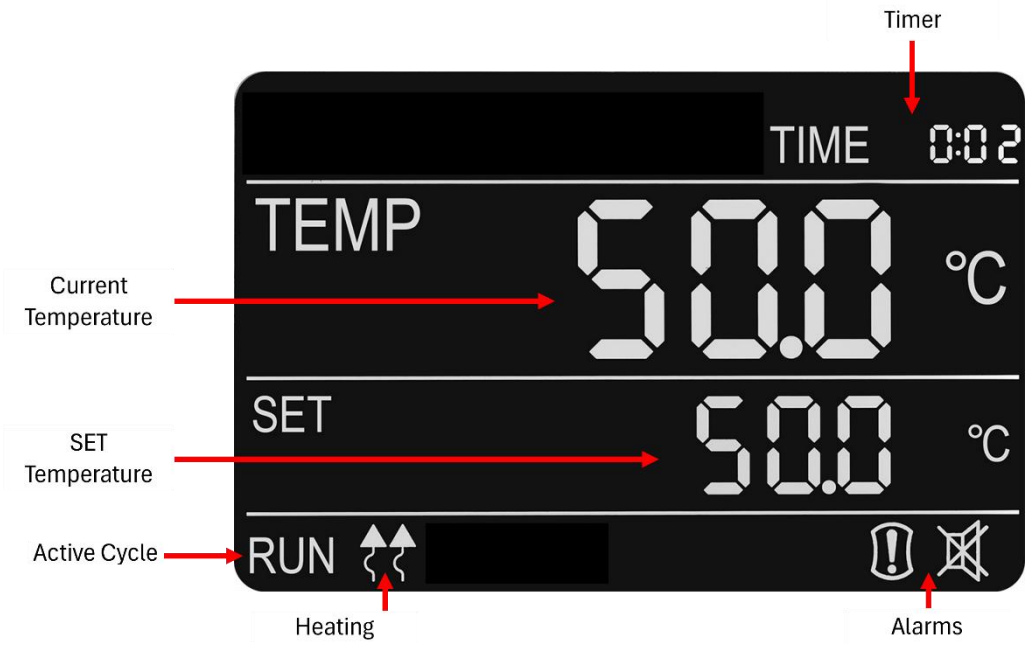
- Stable worktop with a heat-resistant, dry and clean flat surface.
- Minimum spacing of 30 cm around the instrument.
- Ambient temperature between 10 °C and 40 °C and relative humidity not exceeding 85%.
- Grounded power socket.
- Power supply 220-240 V - 50 Hz.

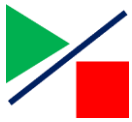
NOTICE	
	Risk of overheating - Damage to the appliance ∅ DO NOT install appliances in unventilated places. ➢ Make sure there is sufficient ventilation to disperse heat.

DANGER	
	**Risk of explosion and Danger of death** ∅ DO NOT operate the device in potentially explosive areas. ∅ DO NOT use explosive dust or air-soluble mixtures in the environment.

8. Instrument parts





COMMAND	DESCRIPTION
	The **SET/PROG** key is used to set operating parameters and to enter/exit programmes. In combination with the **SHIFT** key, it allows access to menus with passwords (see paragraph 12).
	The **SHIFT** key allows you to quickly change the digit (decimal, unit, ten, etc.) of the parameter being edited.
	**The adjustment keys** allow you to increase or decrease the parameter value.
	The **START/STOP** button starts or stops a cycle or programme.
	The **ON/OFF** button is used to switch the instrument on and off. The **ON/OFF** button **'Pump'** allows the circulation pump to be switched on or off (if any).

9. Technical Specifications

Natural convection waterbath	WB-5	WB-12	WB-22
Useful volume	5 litres	12 litres	22 litres
Max. temperature / Resolution	+ 100 / 0,1°C	+ 100 / 0,1°C	+ 100 / 0,1°C
Homogeneity at 37°C	± 0,2 °C	± 0,5 °C	± 0,5 °C
Temperature variation at 37°C	± 0,1 °C	± 0,1 °C	± 0,1 °C
Recirculation pump	No	No	No
Timer	99:59 e ∞	99:59 e ∞	99:59 e ∞
Overtemperature protection	Yes	Yes	Yes
Security class	2	2	2
Bottom plate size	270 x 125 mm	250 x 205 mm	450 x 265 mm
Useful height with closed lid	110 mm	150 mm	150 mm
Power supply / Power	230 V / 700 W	230 V / 900 W	230 V / 1100 W
External dimensions (W x L x H)	480 x 215 x 350 mm	480 x 310 x 380 mm	680 x 365 x 390 mm
Weight	8 Kg	12 Kg	18 Kg
Module capacity	2	4	8

Forced circulation waterbath	WB-22 Pump	WB-40 Pump
Useful volume	22 litres	40 litres
Max. temperature / Resolution	+ 85 / 0,1°C	+ 85 / 0,1°C
Homogeneity at 37°C	± 0,2 °C	± 0,5 °C
Temperature variation at 37°C	± 0,1 °C	± 0,2 °C
Recirculation pump	Yes	Yes
Timer	99:59 e ∞	99:59 e ∞
Overtemperature protection	Yes	Yes
Security class	2	2
Bottom plate size	450 x 265 mm	620 x 380 mm
Useful height with closed lid	150 mm	150 mm
Power supply / Power	230 V / 1100 W	230 V / 2200 W
External dimensions (W x L x H)	680 x 365 x 390 mm	830 x 460 x 390 mm
Weight	18 Kg	28 Kg
Module capacity	8	16

10. Filling the tank

Filling the tank

To ensure proper functioning and preserve the integrity of the instrument, fill the tank with deionised or osmosis water only.

Water level

The water level must always be sufficient to completely cover the pump outlet nozzle (if present) and to keep the heating element immersed, as shown in the figure.

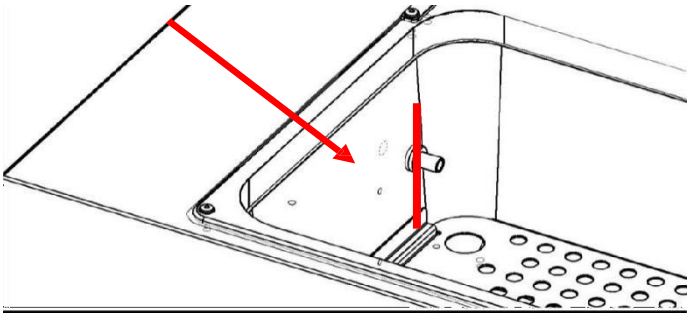
During use, the water level must be monitored to compensate for natural evaporation. Ensure that the level is always adequate, maintaining at least 4-5 cm of clearance from the top edge of the tank (see Figure).

Important note

An insufficient water level can damage the heating system or impair circulation, which can have negative consequences for the performance of the instrument. Check the level regularly and add water if necessary.

Suggestion for use

To reduce evaporation and maintain a more stable water level, we recommend covering the tank whenever possible, using the dedicated cover or a compatible accessory such as a beaker holder.



ATTENTION	
	**Danger of injury** ➢ Use water inside the instrument.
WARNING	
	**Risk of injury and fire** ➢ The waterbath is designed to be used exclusively with NON-flammable liquids. ➢ Never use the waterbath without first placing the water inside the instrument. ∅ DO NOT introduce flammable liquids / material into the instrument.
DANGER	
	**Risk of explosion and Danger of death** ∅ DO NOT use explosive mixtures in the water bath.

11. Emptying the tank

ATTENTION	
	**Danger of injury** ➢ Empty the instrument when the waterbath is not heating and the heating is not hot. ➢ Before proceeding with water removal, wait until the water is arrived at room temperature. ∅ DO NOT empty the instrument when the waterbath is running.

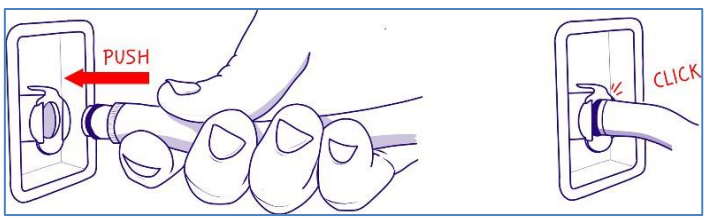
ArgoLab waterbath **are equipped with an emptying kit** with a quick coupling to facilitate the removal of water from the tank. To proceed with emptying, carefully follow the steps below:

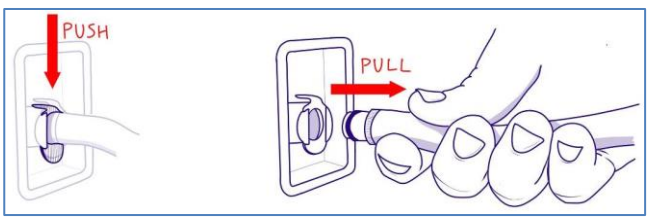
1. **Interrupting the work cycle**: Stop the operation of the instrument using the controls on the control panel.

ATTENTION! **When emptying the instrument's tank, it is essential to ensure that the heating element is no longer powered and has been allowed to cool down beforehand.**

2. **Wait for the water to** cool: Allow the water in the tank to cool down to a temperature safe for handling.
3. **Switch off the circulation pump**: In models equipped with a pump, switch off the pump via the ON/OFF button 'Pump'.
4. Connect the **emptying** kit: Connect the supplied kit to the emptying valve at the front of the instrument. Ensure that the connection is stable.
5. Place the end of the hose in a **suitable container**: Place the end of the hose in a container with sufficient capacity to collect all the water in the tank.
6. **Automatic emptying**: Water will start to drain automatically through the emptying kit.
7. **Removing residual water**: If there is residual water in the tank, remove it using a dry cloth or absorbent paper.
8. **Disconnect the emptying kit**: Remove the kit from the emptying valve using the metal clamping block located above the valve. Be sure to close the valve again to prevent accidental spillage.







12. Operation

Switching on the instrument

Connect the power cable to a grounded power outlet that complies with current safety regulations and turn the instrument on by pressing the **ON/OFF** button. Upon switching on, the display will light up and show the initialisation sequence. Once this sequence is complete, the instrument will be ready for use.
Note: When switched on for the first time, the instrument is set to standby mode, identifiable by the word 'time End' in the top right-hand corner of the display. To start the work cycle, press and hold the **START/STOP** button for a few seconds.

Turning on/off of recirculation pump (where fitted)

The circulation pump, if present, can be switched on or off at any time by pressing the ON/OFF button '**Pump**'. However, the pump can only be switched on if the instrument's main **ON/OFF** switch is in the ON position.
Note: On first use or after emptying the tank, an air bubble may form inside the pump, causing it to run 'empty'. In this case, an abnormal suction noise may be heard during suction. If this happens, switch off the pump immediately and ensure that the water level is above the outlet nozzle of the pump circuit.

Setting Parameters

Operating temperature
When the instrument is switched on, pressing the **SET/PROG** button once will start the set temperature value flashing. You can adjust the desired temperature value (in degrees Celsius) using the **adjustment keys**. To move quickly between digits, press the **SHIFT** button. Once the temperature has been set, confirm the value by pressing the **SET/PROG** button again.

Operating time
After setting and confirming the temperature value using the **SET/PROG** button, the display will show the last set time value (timer), which will start flashing. Set the desired time value (hh:mm) using the **adjustment keys**. You can move quickly between the digits by pressing the **SHIFT** key. Confirm the value by pressing the **SET/PROG** key again.

Note: Setting the value "00:00" activates the "**continuous**" operating mode. In this mode, once the cycle has been started using the **START/STOP** button, the instrument will maintain the set temperature until operation is manually interrupted by pressing the **START/STOP** button again.

Starting and stopping the heating cycle

After setting the operating parameters, the heating cycle can be started by pressing and holding the **START/STOP** button for 4-5 seconds. The cycle will start for the set time (in hh:mm format) or, in continuous mode, if the timer is set to 00:00. At start-up, the word **"end**" disappears from the top right of the display, the word "**RUN**" appears in the bottom left, and the display will simultaneously show the timer, the set temperature and the temperature measured inside the tank.

The cycle can be interrupted at any time by pressing again and holding the **START/STOP** button for 4-5 seconds.

At the end of the set time, the instrument will emit an intermittent beep and the word '**end**' will reappear on the display. The beep can be muted by pressing any button.

Note: The audible signal will continue until muted by the operator. However, at the end of the heating cycle, the tank will not be automatically cooled, so the samples will remain exposed to the temperature inside the tank.

13. Access to submenus with password

To access password-protected functions and parameters, press and hold down **SET/PROG** and **SHIFT** simultaneously for a few seconds. To avoid accidentally entering operating parameter settings, it is recommended to first press **SHIFT** and, while holding it down, also **SET/PROG** for a few seconds.

After this operation, "**Lk**" (lock) will appear in the upper right-hand corner of the display instead of the word **TIME**, with the digits "**0000**" (password) next to it. Below are the passwords and access sequences for the various parameters and functions.

PASSWORD	FUNCTION/ PARAMETER	DESCRIPTION
0000	**dy**	Delayed start heating cycle
0003	**tm**	Temperature limit for sample protection
	Po	Restart mode after power failure
	AL	Temperature limit for over-temperature alarm
	Pb	Temperature offset at one point
	PK	Temperature offset over the entire ramp
	PA	Temperature offset on room temperature sensor

Delay start function – (dy)

A delay (in hours and minutes) can be set for the start of the operating cycle.
Use the **adjustment keys** to set the desired delay (hh:mm). Use the **SHIFT** key to move quickly between digits.
Confirm with **SET/PROG**, after which the display will return to the standby screen.
By pressing **START/STOP** for a long time (4-5 seconds), the instrument will start the programme, but will not start heating immediately. The word '**end**' and the delay time will flash alternately until the actual start of the programme, at which time the regular timer will appear on the display.

Temperature limit for sample protection - (tm)

The instrument allows you to limit the maximum working temperature to protect your samples from incorrect temperature settings. Follow the instructions in paragraph 13 and enter the password **0003** via the **adjustment keys**. Use **SHIFT** to move quickly between digits and confirm with **SET/PROG**. The parameter **tm** (maximum temperature) will appear on the display with the maximum value for the instrument.

Set the desired maximum temperature, beyond which the instrument must not go, using the **adjustment keys**. Confirm the value with **SET/PROG**.

NOTE: It is necessary to take into account the initial temperature peak that the waterbath may have during thermostatting.

Application example: If the set temperature is 100 °C and the tm limit is set at 70 °C, the instrument will attempt to reach 100 °C, but when 70 °C is reached, the alarm is activated and the heating element is switched off until the temperature falls below the set limit.

Restart mode after power failure - (Po)

The mode in which the instrument resumes operation after a power failure can be set:

Po VALUE	DESCRIPTION
0	When the power supply returns, the instrument does not automatically resume the cycle heating, but must be restarted manually.
1	When the power supply returns, the instrument automatically resumes the operation from the beginning of the interrupted heating cycle.
2	When the power supply returns, the instrument automatically resumes the operation from the precise point in the heating cycle where it was interrupted.

Follow the instructions in paragraph 13 and set the password **0003** using the **adjustment keys**. Use **SHIFT** to move between digits and confirm with **SET/PROG**. The display will show the parameter **tm** (maximum temperature) in the top right-hand corner. Press **SET/PROG** again to move to the next parameter **Po** (Power). Set the desired value (0, 1, 2) using the **adjustment keys** and confirm with **SET/PROG**.

Temperature limit for over-temperature alarm - (AL)

The instrument allows specific temperature limits to be set that trigger an alarm in the event of **over-** or **under-temperature**.
Although the values can be changed, the parameter is factory preset and calibrated according to the instrument type.
It is advisable not to alter these settings, as normal temperature fluctuations, especially in natural convection models, may generate false alarms if the set limit is too close to the working temperature.

To change parameter **AL**, please refer to the instructions in paragraph 13. After entering the default password **0003** and confirming with **SET/PROG**, the parameter can be accessed. Using the **adjustment keys**, set the desired value for the alarm limit and confirm again with **SET/PROG**.
The value set for **AL** defines both the upper limit for the **over-temperature** alarm and the lower limit for the **under-temperature** alarm. The instrument will signal an abnormality if the detected temperature exceeds the upper limit or falls below the lower limit.
For example, with a set temperature of **37.0°C** and an **AL** value of **3.0°C**, the instrument will activate the alarm if the temperature exceeds **40.0°C** (37.0°C + 3.0°C) or if the temperature falls below **34.0°C** (37.0°C - 3.0°C).
To silence the alarm, press any key.

14. Temperature Offset - Calibration

The instrument allows the user to set offset values, i.e. calibrations, on one temperature point, on the entire temperature ramp and on the ambient temperature ramp.

Technical note: These values are already factory-calibrated with Accredia-referenced instruments. It is recommended not to change them unless you detect discrepancies between the instrument readings and those of a certified digital thermometer. Follow the instructions in section 13 and enter the password 0003. Use **SHIFT** to move between digits and confirm with **SET/PROG**. Scroll to the desired offset parameters and adjust as required.

PARAMETER	DESCRIPTION
Pb	By modifying this parameter, it is possible to correct the reading of the PT100 temperature sensor inside the instrument to only one temperature point. The correction will therefore be referable to only one specific point.
PK	By modifying this parameter, it is possible to correct the reading of the instrument's internal PT100 temperature sensor over the entire temperature ramp, i.e. to vary the inclination of the reading ramp of the sensor itself.
PA	By modifying this parameter, it is possible to correct the reading of the PT100 room temperature sensor installed on the instrument (refrigerated versions only) to a single temperature point. The correction will therefore be referable to only one specific point.

NOTE: For quick correction of temperature readings on ArgoLab water baths, it is recommended to change the Pb offset.

To correct the Pb offset, follow the instructions:

1. Calculate the temperature difference between the temperature measured by the external thermometer and the temperature read on the instrument.
   NOTE: It is recommended to take average values at regular time intervals (e.g. 10 measurements, one every 2 minutes).
2. Algebraically add the value of the difference just calculated to the value of the current parameter Pb of the instrument (take into account the sign)
3. Wait at least one hour and proceed with a calibration check.
4. Repeat the operation if the result is not sufficient.

Example:
Temperature measured by outdoor probe = 35.5°C
Indicated waterbath temperature = 37.0°C
Temperature difference = (35.5 - 37.0) °C = - 1.5 °C
Instrument parameter Pb value = 2.3
Calibration = -1.5 + 2.3 = 0.8

15. Cleaning and Maintenance

Proper maintenance and cleaning of the instrument ensures its good condition.
The internal tank of the instrument is made of stainless steel, so it can be cleaned with any detergent as long as it is not aggressive and/or corrosive.

DANGER	
  	**Danger of electric shock and Danger of death** ∅ DO NOT spray water or detergents on external surfaces. ∅ Turn off the main switch and disconnect the mains plug before cleaning. ➢ Dry the device completely before switching it on again.

It is recommended to clean the internal and external surfaces with a normal all-purpose cleaner sprayed on a soft dampened cloth. Before proceeding with cleaning or decontamination, the user must ensure that the method adopted does not damage the instrument.

ATTENTION	
	**Danger of corrosion - Damage to equipment** ∅ DO NOT use cleaning agents containing halogen acids. ∅ DO NOT use neutral detergent on other surfaces (e.g. on the galvanised parts of the hinges or on the rear wall of the outer structure).
  	**Eye contact - Eye damage caused by chemical burns** ∅ DO NOT discharge into the sewage system. ➢ Wear protective goggles.

IMPORTANT:
If the instrument is to be sent for service, it must be properly cleaned and possible decontamination from pathogens of the same.
It is also recommended to return the instrument in its original packaging to the repair service.
Any damage caused by incorrect shipment will not be covered by warranty.

16. Troubleshooting

Below is a list of the most common issues that may occur during the use of ArgoLab waterbaths, along with possible causes and related solutions. If the problem persists after performing the recommended checks, contact your instrument dealer for technical support.

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1. The instrument does not turn on (the display does not work)

If the instrument does not turn on and the display remains off, the issue may be due to a power failure or a blown fuse.

Solutions:

- Check that the power cable is properly connected to both the power outlet and the rear of the instrument.
- Verify that the power outlet is functional by plugging in another electrical device.
- Check the fuse located in the rear compartment of the instrument. If it is blown, replace it with the supplied fuse.
- If the problem persists, contact your **dealer**.

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2. The instrument does not heat

If the instrument does not reach the set temperature, the issue may be related to the work cycle settings or safety parameters.

Solutions:

1. **Check the set temperature**: Ensure that it is at least 5°C higher than the ambient temperature. If not, increase the set point.
2. **Verify that the heating cycle is running**:
    - Ensure that the display shows "RUN" in the bottom left corner.
    - If not, press and hold the Start/Stop button for 4 seconds to start the cycle.
3. **Check the sample protection parameter (TM)**:
    - Press and hold the SET + SHIFT buttons for 4 seconds, enter the password 0003, and verify the TM parameter.
    - If this value is set below the working temperature, increase it by at least 3°C for incubators and 5°C for ovens.
4. If the problem persists, contact your **dealer**.

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3. The pump does not work (only for "pump" models)

If the instrument's pump does not activate, the issue may be due to an inactive work cycle or a clogged supply/return tube.

Solutions:

- Verify that the cycle is active as described in the previous section.
- Ensure that the supply and return tubes are clear.
- If the pump does not activate even when the cycle is running, contact your **dealer**.

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4. The display shows four squares [□□□□] instead of the temperature

This issue indicates that the temperature probe is not being detected by the instrument.

Solution:

- Contact your dealer for assistance.

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5. The temperature fluctuates abnormally

If the instrument's temperature does not stabilize and fluctuates significantly, the most common causes include excessive or unevenly distributed load, frequent lid openings, or improper installation location.

Solutions:

1. **Check the sample arrangement**:
    - Samples should be evenly distributed, leaving enough space for liquid circulation.
    - Do not overload the instrument or place samples directly on the heating element. Always use the bottom tray.
2. **Verify the instrument installation**:
    - It should be positioned at least 30 cm away from walls, windows, heat sources, and ventilation systems.
3. **Perform an empty test**:
    - Completely drain the internal tank.
    - Set the temperature to 37°C.
    - Run the instrument for 2 hours with the lid closed and monitor the temperature during the last hour.
4. If the problem persists, contact your **dealer**.

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6. Over-temperature or under-temperature alarm is active

If an alarm activates near the set temperature, the **AL parameter** may be incorrectly configured.

Solutions:

- Access the menu via SET + SHIFT, enter the password 0003, and check the **AL value**. If too low, increase it (**3.0** for incubators and **10.0** for ovens).
- Ensure that the instrument is not exposed to temperature fluctuations and that **only deionized or double-distilled water** is used. **Note:** Change the water periodically.

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7. After a power outage, the instrument does not resume its work cycle

If the instrument does not automatically resume the preset program after a power failure, the **blackout restart parameter** may be set to manual stop.

Solutions:

Access the service menu using SET + SHIFT, enter the password 0003, and check the **Po parameter**:

- **Po = 0** → Manual restart required.
- **Po = 1** → Restarts from the beginning of the cycle.
- **Po = 2** → Resumes from the exact point where it stopped.

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8. The display does not respond to commands

If the display is unresponsive or the buttons do not function properly, the issue may be due to a temporary software lock.

Solution:

- Turn off the instrument and unplug it from the power source for **30 seconds**.
- Reconnect the power and turn the instrument back on.
- If the problem persists, contact your **dealer**.

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9. The waterbath is leaking

If the waterbath is leaking from the **drain valve**, the issue may be caused by sediment buildup or foreign objects such as small labels, sample residues, or limescale.

Solution:

- Turn off the instrument, unplug it from the power source, and completely **drain** the internal tank.
- Using a thin object (e.g., a pen), apply **gentle pressure from the outside to the inside** on the center of the valve membrane.
    - This will help the membrane return to its correct closed position.
- If visible residues are present, **remove them with tweezers**.
- If the problem persists, contact your **dealer**.

17. Shipping in Technical Assistance

Should the instrument be **sent for service**, it must be properly cleaned and possibly decontaminated from pathogens. For shipping, it is recommended to use the instrument's original packaging. In the absence of this, it is important to provide **sturdy and suitable packaging** to ensure protection during transport.
We recommend removing the shelves and their supports and drying the instrument completely.
Please note that any damage caused by incorrect shipment will not be covered by the warranty. For detailed instructions on cleaning and decontamination, please refer to the "Cleaning and Maintenance" section of the manual or contact technical support directly.

18. Warranty

Under conditions of use in accordance with the specifications, this instrument is covered by warranty for a period of 24 months from the date of purchase.
The guarantee is only valid for the product in its original configuration.
It does not apply to products or components that have been damaged as a result of: installation not in accordance with specifications, improper electrical or mechanical connections, inappropriate use or use not in accordance with the operating manual, accidents or fortuitous events, operating conditions outside the specified parameters.
The manufacturer accepts no liability for damage resulting from use not in accordance with the instructions in the operating manual, failure to carry out prescribed maintenance procedures, unauthorized modifications and alterations made to the product.
Please consult the user manual for detailed instructions on the correct use and maintenance of the instrument.

19. Disposal of electronic equipment



This equipment is classified as an electronic device and is subject to specific regulations for the disposal of such devices. When disposing of this equipment, please strictly adhere to the legal requirements for electronic waste in your jurisdiction. It is recommended that you consult the relevant local authorities or the supplier of the equipment for details of disposal procedures in accordance with current environmental regulation.