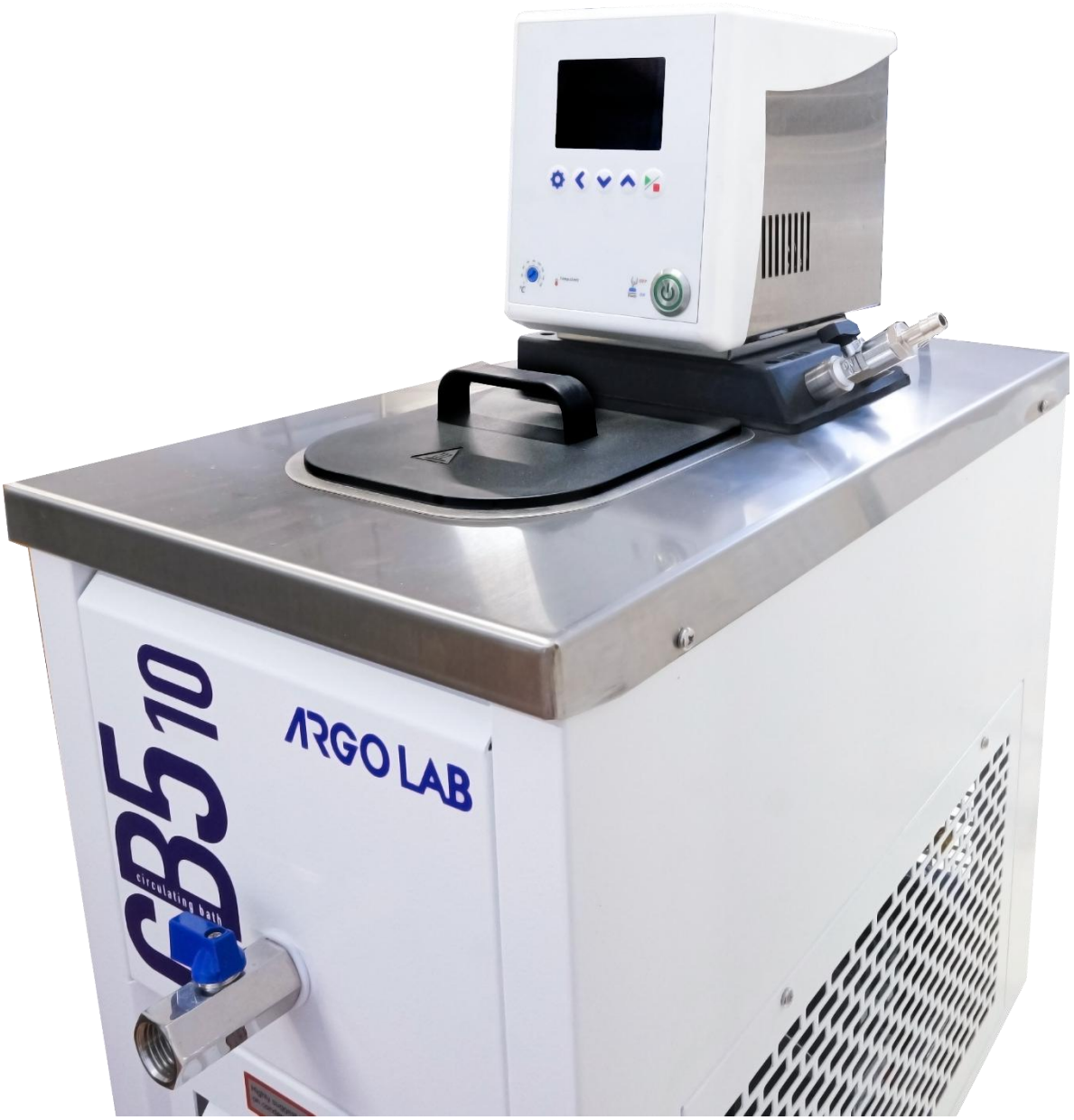
CIRCULATING BATHS

User's Manual



Internal and external forced circulation bath with microprocessor temperature controller.

Model	***Description***	***Temperature range***
CB 5-10	*Internal and external forced circulation bath 5 L (useful volume)*	*-10°C to +100°C*
CB 5-20	*Internal and external forced circulation bath 5 L (useful volume)*	*-20°C to +100°C*
CB 5-30	*Internal and external forced circulation bath 5 L (useful volume)*	*-30°C to +100°C*

Drafting by the Agent:
Giorgio Bormac s.r.l. Via della Meccanica,
25 41012 Carpi (MO) VAT no.
02309180368
Tel. +39 059 653274 Fax +39 059 653282
Email info@giorgiobormac.com

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1. Security Information

- **Definitions of warning words and symbols**

The safety information in this manual is very important in order to avoid personal injury, damage to the instrument, malfunction or incorrect results due to non-compliance. Please read this manual carefully in its entirety and make sure you familiarise yourself with the instrument before you start working with it. This manual must be kept near the instrument so that the operator can refer to it if necessary. Safety instructions are indicated by warning terms or symbols.

- **Reporting deadlines:**

WARNIN for a hazardous situation that could lead to minor or moderate injury, injury serious or death if not avoided.

NOTICE for important product information.

NOTES 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**

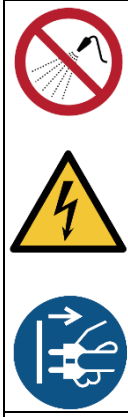
	**Do not wet with water**

- **Symbols of obligation**

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

2. General safety instructions

If the installation, commissioning, cleaning, adjustment or fine-tuning of the circulating bath is not carried out correctly, there is a risk of malfunction, which could lead to physical injury to persons and material damage to the instrument and samples. Therefore, the circulating bath must only be installed, commissioned, cleaned, adjusted and set-up by qualified personnel.

DANGER	
	**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 side panel or the circulating bath head is dented or damaged. ➢ Before opening the side panel or the circulating bath head, remove the plug from the power supply. ➢ In the event that the power cord, side panel or head of the instrument is damaged, discontinue use immediately, unplug the instrument from the power supply and contact your dealer for any necessary repairs. ➢ All work on the electrical components of the instrument must only be carried out by qualified personnel.
	**Danger of** ➢ 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 the selected operating temperature.
	**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.

WARNING	
	**Fire hazard** ⃠ Thermoconstats must not be used if the class 3.1 safety thermostat has failed. ➢ If the safety thermostat check fails, immediately stop using the circulating bath, remove the plug 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.

ATTENTION	
	**Danger of burns** ➢ The cover of the circulating bath overheats and should not be touched during operation of the instrument. ➢ Use the handle on the lid
	**Risk of injury and Danger of breakage** ➢ Ensure that the supporting surface of the instrument can support the weight of the circulating bath and the liquid that will be placed inside it
 	**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 cover.

3. CE marking data

Our instruments bear the CE mark. The EU Declaration of Conformity (CE certificate) is available for download from our website. Argolab instruments are manufactured in accordance with Directive 2006/42/EC and the relevant EU Directives applicable at the time of placing on the market; compliance with the applicable harmonised standards demonstrates conformity with the essential health and safety requirements.

4. Equipment

The instrument will be delivered complete with the following parts:

1. No. 2 hose couplings (installed on the instrument)
2. External circulation opening/closing tap (installed on the instrument)
3. Set of two 2 metre pipes each complete with insulation material
4. No. 4 adjustable steel clamps
5. PT100 temperature probe (external probe)
6. Fuses
7. User's 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 cover.

Transport of a circulating bath already used

1. Switching off the Argolab circulating: Switch off the Argolab circulating bath using the main switch.
2. Disconnecting the power supply: Disconnect the power plug from the power socket.
3. Cleaning: Thoroughly clean the Argolab circulating bath according to the instructions in the chapter on maintenance and cleaning.
4. Removal of accessories: If installed, remove the pipe set or other connected accessories.
5. Drying: Carefully dry the inside of the circulating bath and the removed components (e.g. pipes or other accessories).
6. Packaging: Pack the Argolab circulating bath, including accessories, in the original packaging.
7. Protection against contact with liquids: Ensure that the circulating bath does not come into contact with liquids during transport.
8. Environmental conditions: During transport, maintain the permissible ambient temperature of -10 °C to +60 °C.

Note: Adherence to the above instructions guarantees the correct transport and protection of the Argolab Circulating bath.

6. Conservation

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

7. First Installation

Preliminary Operations

The circulating bath must be installed under the following conditions:

- Stable work surface with horizontal, dry and clean surface.
- Minimum spacing of 30 cm on all sides around the instrument.
- Ambient temperature between 5 °C and 35 °C and relative humidity not 85%.
- Grounded power socket.
- Power supply 220-240 V - 50 Hz.

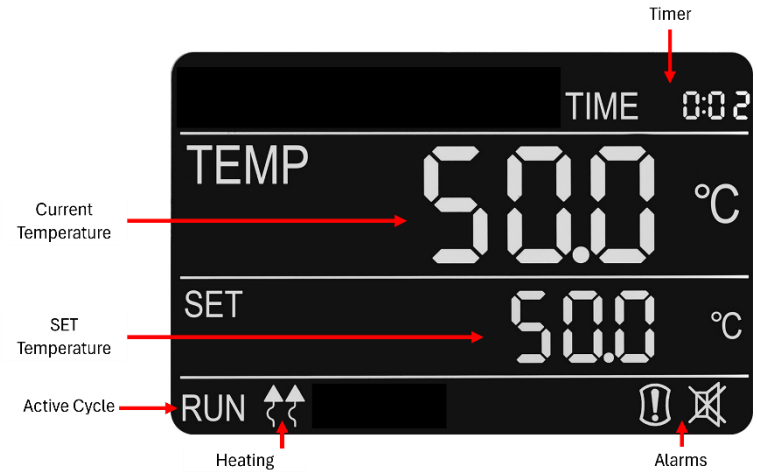
NOTICE
Risk of overheating - Damage to the appliance ∅ DO NOT install appliances in unventilated places. ➢ Make sure there is sufficient ventilation to disperse heat.

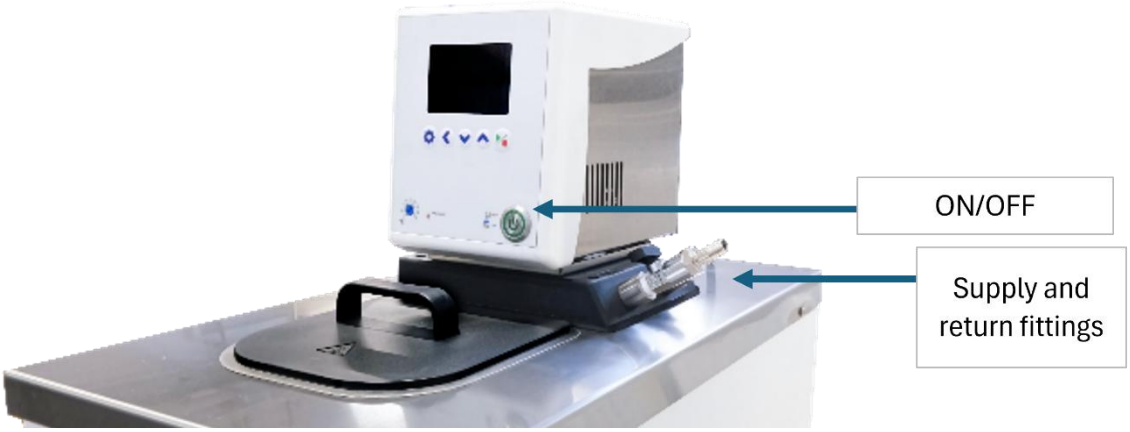
DANGER
Risk of explosion and danger to life. ∅ DO NOT operate the device in potentially explosive areas. ∅ DO NOT use explosive dust or air-soluble mixtures in the environment. ∅ DO NOT use naked flames in the vicinity of the instrument.

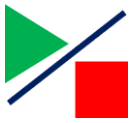
8. Instrument parts









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.

10. Technical Specifications

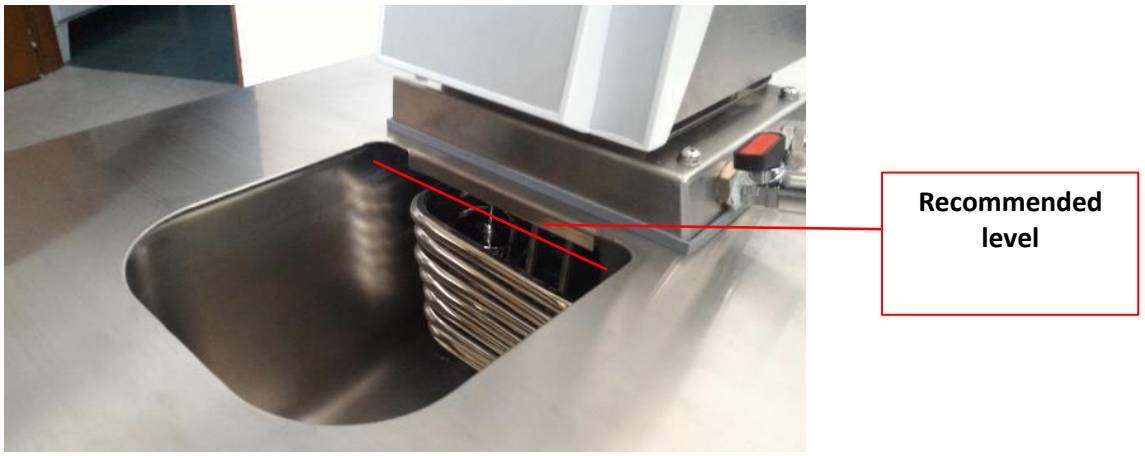
Forced circulation circulating bath	CB 5-10	CB 5-20	CB 5-30
Useful volume	5 litres	5 litres	5 litres
Working Temperature Range / Resolution	-10 to + 100 / 0.1°C	-20 to + 100 / 0.1°C	-30 to + 100 / 0.1°C
Stability Temperature at 20°C	± 0,3 °C	± 0,2 °C	± 0,2 °C
Recirculation pump	Yes	Yes	Yes
Timer	99:59 e ∞	99:59 e ∞	99:59 e ∞
Overtemperature protection	Yes	Yes	Yes
Inside tank size (W x D x H)	145 x 150 x 150 mm	145 x 150 x 150 mm	145 x 150 x 150 mm
Power supply / Power	220-240 V / 2300 W	220-240 V / 2600 W	220-240 V / 2600 W
External dimensions (W x D x H)	290 x 570 x 710 mm	380 x 670 x 840 mm	380 x 670 x 840 mm
Weight	34 Kg	54 Kg	54 Kg

11. Filling the tank

Fill the tank with a suitable thermal fluid, such as demineralised water, mixtures of water and ethylene glycol or pure ethylene glycol. The fluid must have suitable physical and chemical properties to reach the desired temperature without freezing or becoming excessively viscous. It is important that the fluid level is always at the maximum capacity of the tank or at least sufficient to ensure that the cooling coil remains fully immersed, to avoid damage or malfunction.

If water or its mixtures are used, the natural evaporation of the liquid must be taken into account. For this reason, it is essential to regularly check the level and top up the thermal fluid so that the cooling and heating elements of the instrument are always covered.

IMPORTANT: No liability can be accepted for any damage resulting from the use of a thermal fluid that is unsuitable or does not comply with the stated specifications.



ATTENTION



Danger of injury

∅ Never operate the instrument without fluid in the tank.

➢ Check the tank periodically to ensure that the fluid level is within acceptable levels. Always fill the reservoir using the same fluid already in the tank.

∅ Do not damage the coil inside the tank.

➢ If the internal coil is damaged, switch off the instrument and contact the supplier.

WARNING



Risk of injury and fire

➢ The Circulating bath is designed to be used exclusively with NON-flammable Class I liquids (DIN 12876-1).
➢ Never use the circulating bath without first inserting the appropriate fluid into the tank.
➢ Pay attention to the chemical risks associated with the fluid used.
➢ Observe all warnings in the safety data sheet**.**
➢ Preferably use recommended thermal fluids.

∅ DO NOT introduce flammable liquids / material into the instrument.

DANGER



Risk of explosion and Danger of death

∅ DO NOT use explosive mixtures in the Circulating bath.
∅ DO NOT use acidic fluids.

12. **Pipe connection for external circulation**

Argolab circulating baths allow you to thermostat an external circuit through the flow and return connections connected to the tank. The instrument is supplied as standard with two 'resca' hose connectors already installed, two hoses of 2 metres each complete with thermal insulation, and four fixing clamps.

The delivery connection from the tank is equipped with a tap that allows the external circulation to be completely cut off if necessary.

To use the external circuit, connect the external system to the cryostat using the hoses supplied. Be sure to securely fasten the hoses to the hose connectors using the hose clamps provided, thus ensuring a stable and secure connection.



NOTE: The circulation pump in the tank is automatically switched on as soon as the instrument is energised via the main switch. The pump ensures continuous recirculation of the fluid both within the tank (internal recirculation) and to the delivery connection (external recirculation).

If an external circuit is not connected, it is essential to keep the tap on the delivery connection closed. Leaving the tap open in the absence of an external circuit could cause the thermal fluid to escape from the tank, impairing the operation of the instrument and causing possible damage.

13. **Operation**

Switching on the instrument

Before connecting the power cable to a power outlet, make sure that the tank has been properly filled. Next, switch on the instrument using the ON/OFF button. Upon switching on, the display will light up and show the initialisation sequence. At the end of this sequence, the instrument will be ready for use.

NOTE: Each time the instrument is switched on, it emits an intermittent beep, accompanied by a visual alarm icon and the word 'END' on the display. This indicates that, prior to switching off, a thermostatting cycle had been completed. To silence the audible signal, simply press any button; the alarm icon will remain visible on the display.

Switching the refrigerating unit on/off

The refrigerating unit can be switched on or off at any time by means of the ON/OFF button called 'Cooling switch', located on the back of the instrument. By default, the cooling unit is set to the ON position.

NOTE: When the set temperature is much higher than the room temperature (> 40°C), the refrigerating unit can be switched off. However, to ensure better temperature control, it is recommended to keep the refrigerating unit active even at high temperature settings. The instrument will automatically regulate heating and cooling to keep the temperature stable.

Operating temperature

With the instrument switched on, press the **SET/PROG** button once: the set temperature value will start flashing on the display. Use the **adjustment keys** to set the desired value (in degrees Celsius). To scroll quickly through the figures, press the **SHIFT** key. Once the desired temperature has been set, confirm by pressing the **SET/PROG** button again.

Operating time

After confirming the temperature value, the last set time value (timer) will start flashing on the display. Use the **adjustment keys** to set the desired time in the format hh:mm. To move quickly between the digits, you can use the **SHIFT** key.
Once the desired value has been selected, confirm by pressing the **SET/PROG** button again.

NOTE: By setting the value "00:00", the instrument will enter continuous operation mode. In this mode, once the cycle is started using the **START/STOP** button, the system will maintain the set temperature until manually stopped by pressing the **START/STOP** button again.
If instead a defined time value is set, e.g. 1:00 (1 hour), the instrument will reach the set temperature and maintain it for the specified period. At the end of the set time, the operating cycle will stop automatically.

Start/stop the operating cycle

After setting the operating parameters, the cycle can be started by pressing the **START/STOP** button and holding it down for **4-5 seconds**. Once started, the word '**END**' in the upper right-hand corner of the display disappears, while the word '**RUN**' appears in the lower left-hand corner. During operation, the display will simultaneously show the timer, the set temperature and the temperature measured inside the tank.

The cycle can be stopped manually at any time by pressing the **START/STOP** button for **4-5 seconds**. At the end of the set time or in the case of a manual stop, the instrument will emit an intermittent beep and the visual alarm icon and '**END**' will appear on the display. To silence the audible signal, simply press any key; afterwards, the alarm icon will remain visible on the display, indicating that the cycle has ended.

It is important to note that the acoustic signal will continue until it is switched off by the operator. However, once the cycle is over, the samples inside the instrument will remain exposed to the temperature in the tank.

Liquid level control in the tank

The instrument is equipped with a system for detecting the level of liquid inside the tank, which indicates the amount of fluid by means of an icon on the display:



Sufficient liquid level



Insufficient liquid level: must be topped up

IMPORTANT: when the instrument detects an insufficient liquid level, it immediately stops heating, but the recirculation pump and refrigeration unit continue to operate.
Consequently, they could be damaged if the liquid is not topped up.

External circuit temperature control

The instrument is supplied as standard with a dedicated connection and an external temperature probe. To check the temperature in the external circuit, simply connect the probe to the provided connection; the instrument will automatically recognise the external probe, excluding the internal probe.

IMPORTANT NOTE: When connecting the external probe, the internal probe is automatically excluded, and the instrument controller will regulate heating or cooling according to the temperature detected by the external probe. If the outdoor probe is not in use, it is essential to disconnect it from its connection. Leaving the external probe connected without using it could cause unwanted heating or cooling of the fluid, which could affect the operation of the instrument and the thermostatting process.

14. 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 - Delay

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 water bath 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 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.

15. Temperature Offset - Calibration

The instrument allows the user to set offset values, i.e. calibrations, on a 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 there are 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 a quick correction on temperature readings on ArgoLab thermostats, 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
Temperature indicated by circulating bath= 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

16. Introduction of samples into the Circulating bath

DANGER	
	**Danger of explosion and Danger of death** ⃠ 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 would result in the formation flammable materials at the selected operating temperature.
	**Danger of Poisoning and Danger of Death** ⃠ Never introduce materials into the instrument whose combustion could result in the formation of poisonous gases. ⃠ Never introduce materials into the instrument that can react with moisture and form explosive gases.

17. Tank emptying, cleaning and maintenance

To empty the tank, use the tank drain cock at the front of the instrument.
If necessary, remove residual liquid with a cloth or paper towel, taking care that the fibres of the latter do not get into the drain nozzle at the bottom of the tank. Proper maintenance and cleaning of the instrument ensures its good condition. The internal chamber 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. ∅ Switch off main switch and disconnect the mains plug before cleaning. ➢ Dry the device completely before switching it on again. ➢ Before cleaning the instrument, make sure it is not powered.

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

ATTENTION	
 	**Risk of injury and fire** ∅ Before cleaning the circulating bath, wait until the temperature raising and lowering bodies inside the tank have reached room temperature. ➢ Wait until the fluid inside the tank has reached room temperature.

WARNING	
	**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.

18. *Preparing the tool for technical assistance*

If it is necessary to send the instrument to the service department, it is mandatory to carry out a proper cleaning and, if necessary, a complete decontamination of any pathogens. This operation guarantees the safety of the operators when handling and repairing the instrument.

It is recommended to use the instrument's original packaging for transport. If the original packaging is not available, suitable packaging must be provided to ensure the protection of the instrument during transport.

NOTE: Any damage caused by inadequate packaging during shipment will not be covered by the warranty.

19. Checking the cooling unit compartment, heat sink and fan

Before proceeding with the inspection of the cooling unit compartment and its components, it is necessary to interrupt the operating cycle of the instrument, switch it off using the main ON/OFF button and disconnect the power cable from the electrical socket. After switching off the instrument, wait at least 30 minutes to allow the heat sink and refrigerating unit to cool down, thus ensuring safety during the inspection.
The grid panel, located at the lower front of the instrument, is fixed by magnets. To remove it, first gently pull the upper part outwards, then the lower part.





Ensure that the refrigeration unit compartment and its components are clean and free of blockages or obstructions. Pay particular attention to the heat sink's exchange surface, ensuring that it is well cleaned and that the metal fins are not bent or damaged.
If cleaning is necessary, use a normal vacuum cleaner, keeping the suction nozzle at a suitable distance to avoid bending the metal fins. For other parts of the compartment, use a soft cloth and a non-aggressive or corrosive cleaning agent. The cleaning agent should always be diluted with water and never used purely. When cleaning is complete, replace the front grille panel in its place, ensuring that it is correctly aligned and secured.

20. Warranty

Under normal conditions of use, this instrument is guaranteed for a period of 24 months from the date of purchase. The guarantee is only valid if the purchased product remains in its original condition and has not been modified. The guarantee does not cover damage caused by incorrect installation, improper connections, incorrect use, accidents or abnormal operating conditions. Similarly, damage resulting from use not in accordance with instructions, failure to perform the specified maintenance or unauthorised modifications is excluded from the guarantee.
NOTE: No liability is accepted for any indirect or consequential damage resulting from failure to comply with the instructions for use or from unauthorised intervention on the instrument.

21. Disposal of electronic equipment

This equipment is subject to regulations for electronic devices.
Dispose of in accordance existing local regulations.

