FOUR E'S SCIENTIFIC

Operating Instructions

Tissue Flotation Bath

TFB100101

Contents

Please read the operating instructions in full before starting up and follow the safety instructions.
The appearance and specifications are subject to change without notice.

1. Preface

Thank you for purchasing Tissue Flotation Bath. To get the best performance from this device, and for safety purposes, please read this operating manual completely before use. Also keep it in a place that is easily accessible. Any operation not described in this manual is strictly prohibited and will void the product warranty. Unauthorized use may also compromise device functionality and cause harm. Four E's Scientific disclaims all liability for damages arising from unauthorized use, modification, or misuse of the product.

2. Declaration of Conformity

This product is CE marked, confirming compliance with the following standards:

Low Voltage Directive 2014/35/EU,

Electromagnetic Compatibility

2014/30/EU

EN 61010-1:2010

EN 61326-1:2013

3. Safety

3.1 Safety Instructions

- This instrument is designed for indoor use. Please read this operation manual thoroughly before operating the instrument to prevent personal injury.
- Do not attempt to open or repair the instrument. Unauthorized repairs will void the warranty and may result in electric shock. For any servicing needs, please contact our company.
- To prevent electric shock, the device must be securely grounded. This instrument uses a three-pin plug, with the third pin serving as the ground connection. It must be used with a properly grounded power outlet.
- Do not block the ventilation port during operation, as this may impair heat dissipation and reduce instrument performance.
- Never leave the device unattended.
- Do not run the heating function without water in the glass dish, as this may damage the probe and the unit.
- The temperature may be unstable during the initial heating phase.
- Water should be placed only in the glass dish. Filling the chamber without the glass dish may damage the bath and pose an electrical hazard.
- Regular stirring of water helps maintain consistent temperature throughout the bath.
- Allowing water to come near or in contact with power sources may cause electric shock.
- Do not install the instrument in or near areas where flammable gases are generated or chemicals are stored.

• Place the instrument on a level, stable, clean, non-slip, dry, and fire-resistant surface.
• Ensure the power cord does not come into contact with the heating plate.
• Do not place any objects on the heating plate except the glass dish.
• To prevent injury, do use the following materials:
  - Flammable or explosive substances
  - Strong chemical agents
  - Toxic or radioactive materials

Hot surface!

- Do not touch surfaces that become hot during high temperature operation.
- Residual heat may remain after the device has been turned off.
- Always allow the instrument to cool down completely before moving or transporting it.

3.2 Intended Use

This tissue flotation bath is designed for use in histology and pathology laboratories to float and expand paraffin-embedded tissue sections following microtomy. It minimizes wrinkles and folds by gently floating the ribbons on a heated water bath, preparing flawless sections for mounting onto glass slides for subsequent staining (e.g., H&E, IHC) and microscopic diagnosis.

4. Unpacking and Installation

4.1 Unpacking

Unpack the package carefully and examine the contents for potential damages that may have occurred during transit. If you observe discernible damage, please promptly contact your local seller for assistance. In the event of any discernible damage to the device, refrain from connecting the device to a power source to avoid any potential risks or further harm.

Box contents

Item	Quantity
Tissue flotation bath	1
Glass dish	1
Power cord	1
User manual	1

4.2 Installation

Placement

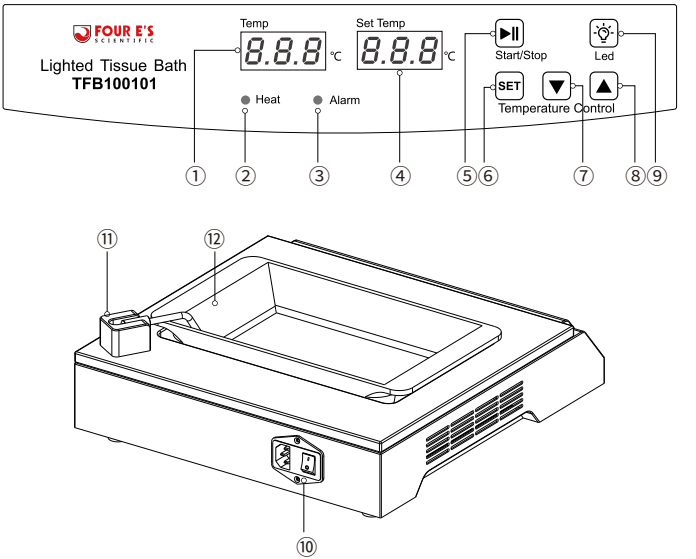
- Place the instrument on a level surface, away from any flammable materials, and ensure the power plug and switch are easily accessible.
- Maintain a minimum clearance of 30 cm (approximately 1 foot) around the instrument to ensure proper ventilation and access.
- Lift the external temperature probe and position the glass dish centrally within the heating chamber.
- Carefully lower the temperature probe back into the glass dish.
  Caution: The heating system will not activate unless the probe is correctly seated in the dish.
- Fill the glass dish with water to at least half its capacity, taking care to avoid overfilling and spillage. (Note: Depending on experimental requirements, tap water, distilled water, or purified water may be used.)

Power supply

- Ensure that the power supply voltage matches the specified requirement indicated on the device nameplate. The power outlet must be grounded.
- To disconnect the device from the power supply, pull the power plug out of the socket.

5. Product Introduction

5.1 Product Structure



① Real-time temperature
② Heater indicator
③ Alarm indicator
④ Set temperature
⑤ Start/Stop button
⑥ SET button
⑦ Increment button
⑧ Decrement button
⑨ LED ON/OFF switch
⑩ Power switch
⑪ External temperature probe
⑫ Heating plate

5.2 Technical Parameters

Model	TFB100101
Temperature range	RT-75°C
Temperature accuracy	±1°C
Timer range	1-999min
LED illuminated dish	yes
Over-heat protection	yes
Heater-on indicator	yes
Alarm indicator	yes
Temperature calibration	yes
Glass dish size (LxWxH)	295 x 170 x 50mm
Overall dimensions (LxWxH)	385 x 350 x 120mm
Input voltage	AC100-120V; AC200-240V； 50~60Hz
Heating power	450W
Operational temperature	0-40°C
Weight	7.95kg

6. Operation

Start/Stop: Click to start or stop operation

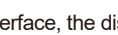
Setting the Temperature (SP):

(1) Press the [SET] button to enter the temperature setting menu. The display will change to [SP]. (Note: Press [SET] button switch the parameter settings)

(2) Use the [▼] [▲] buttons to obtain your desired set temperature. A short press increases/decreases the value by 0.1°C, while a long press changes it continuously.

(3) Press the SET button again to save the setting and proceed to the Time Setting (St).

Setting the Time (St):

(1) At the time setting interface, the display will change to  .

(2) Use the ▼ ▲ buttons to obtain your desired set time. A short press increases/decreases the value by 1min, while a long press changes it continuously.

(3) Press the SET button again to save the setting and proceed to the Over Temperature Alarm setting (Pt).

Note: The factory default is continuous mode. Once a timer is set, heating will stop automatically when the countdown ends. Setting the value to 0 disables the timer function and returns the unit to continuous operation.

Setting Over Temperature Alarm (Pt):

(1) At the over temperature alarm interface, the display will change to  .

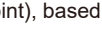
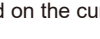
(2) Use the ▼ ▲ buttons to obtain your desired over temperature alarm value. A short press increases/decreases the value by 0.1°C, while a long press changes it continuously.

(3) Press the SET button again to save the setting and back to the home screen.

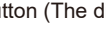
Note: The factory default value is 5, which means the over temperature alarm will be triggered when the temperature reaches 5°C. The maximum adjustable value is 75.

7. Temperature Calibration

(1) Set Target Temperature: Adjust the device's target temperature to the desired calibration point. (Low Calibration Point: recommended at 37°C; High Calibration Point: recommended at 65°C) Then start the heating process and wait for the temperature to fully stabilize before proceeding calibration.

(2) Enter Calibration Mode: Long-press the SET button. The display will show either  (Low Calibration Point) or  (High Calibration Point), based on the current temperature.

(3) Adjust the Value: Press ▼ ▲ buttons to enter the actual measured temperature value. Each press changes the value by 0.1°C. For rapid adjustment, long-press the buttons.

(4) Save or Exit: To save the new value and exit, long-press the SET button (The display will show ); To exit without saving, short-press the SET button (The display will show ).

8. Cleaning and Maintenance

This device does not need special maintenance.

Cleaning

- Always disconnect the power supply before cleaning!
- Recommended cleaning agents: aqueous surfactant solution or isopropyl alcohol.
- Wear protective gloves when cleaning the instrument.
- Do not submerge electronic components in any cleaning agent.
- Avoid allowing moisture to enter the instrument during cleaning.
- If using cleaning methods not recommended by the manufacturer,

please confirm with us first that the method will not cause damage to the instrument.

Maintenance

- Preparing for Service: Before shipping the instrument for inspection or repair, it must be thoroughly cleaned. You must ensure that all hazardous or biologically active materials have been completely removed from the device.
- Packaging for Return: To prevent damage during transit, the instrument must be securely packaged. Using the original manufacturer's packaging is highly recommended. If the original packaging is unavailable, please use a suitably sized box with sufficient cushioning material to protect the device.

9 Troubleshooting

Error code	Description	Solutions
Er 1	External temperature probe short circuit	Contact the supplier for servicing
Er 2	External temperature probe open circuit	Contact the supplier for servicing
Er 3	Internal temperature probe short circuit	Contact the supplier for servicing
Er 4	Internal temperature probe open circuit	Contact the supplier for servicing
Er 5	EEPROM Memory Error	Contact the supplier for servicing
Er 6	The current temperature exceeds the high temperature alarm value	Adjust the high temperature alarm value
Er 7	The calibration temperature is out of range	Recalibrate

If any errors not listed on above table or if the problem remains, please contact your local dealer or supplier.

10. Warranty

We guarantee that our scientific instruments adhere to the most rigorous engineering and quality standards. This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of dispatch. The warranty is extended only to the original purchaser. For claims under the warranty, please contact your local supplier. After the warranty period expires, the manufacturer retains the right to invoice the cost price for the repair or maintenance of a faulty device, along with any associated service fees.

Scope of Warranty

The following conditions are not covered under the warranty.

- Faults or damage caused by negligence, improper installation, improper operation, or failure to use and maintain the machine inaccordance with the instructions in this operating manual.
- Issues caused by unauthorized disassembly or modification.

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