



# Illuminated Tissue Flotation Bath

Model  
145702  
145702-2  
145951  
145951-2

## Operating Instructions

# TABLE OF CONTENTS

Page

1.	<b>Safety</b> .....	2
2.	<b>Product Information</b> .....	2
3.	<b>Assembly</b> .....	3
3.1	Unpacking .....	3
3.2	Installation .....	3
4.	<b>Operation</b> .....	3
4.1	<b>Controls</b> .....	3
4.2	<b>Filling the Bath</b> .....	4
4.3	<b>Turning The Unit On</b> .....	4
4.4	<b>Mode Key</b> .....	5
4.5	<b>Setting Temperature</b> .....	5
4.6	<b>Dryer Block</b> .....	6
4.7	<b>Orienter Block</b> .....	<b>Error! Bookmark not defined.</b>
5.	<b>Fault Diagnosis</b> .....	6
6.	<b>Accessories</b> .....	7
7.	<b>Technical Specifications</b> .....	7
8.	<b>Maintenance and Service</b> .....	7
8.1	<b>Cleaning</b> .....	7
8.2	<b>Replacement of Fuses</b> .....	7
9.	<b>Warranty</b> .....	8
10.	<b>Service</b> .....	8

## 1. Safety

### The following symbols marked on the equipment mean:



Caution: Read these operating instructions fully before use and pay particular attention to sections containing this symbol.

Attention: Suivre attentivement les instructions avant l'usage et prêtez une attention particulière aux sections comportant ce symbole.

Caution: Surfaces can become hot during use.



Attention: Les surfaces peuvent devenir brûlantes pendant l'usage.

### Always observe the following safety precautions:



- Use only as specified by the operating instructions or the intrinsic protection may be impaired. After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.
- Connect only to a power supply with a voltage corresponding to that on the serial number label.
- Connect only to a power supply that provides a safety ground terminal.
- 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.
- Before moving, disconnect at the power supply socket.
- Do not touch surfaces that become hot during high temperature operation.
- Ensure that the operating temperature is less than the maximum operating temperature of your sample material.
- Ensure that the power switch is easily accessible during use.
- If liquid is spilled inside the unit, disconnect it from the power supply and have it checked by a competent person.
- It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilled on or inside the equipment.
- This product must be used with an UL Listed / CSA Certified power supply cord set.
- The responsible body shall be made aware that, if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

## 2. Product Information

The Boekel Illuminated Tissue Floation Bath is designed to help eliminate wrinkles and distortions in tissue specimens as they are being mounted on glass microscope slides. The Tissue Floation Bath provides a temperature-controlled glass dish water bath for specimen preparation, a digital temperature readout for determining bath temperature and LED illumination of the bath and tissue specimen. The glass dish water bath has two molded side handles allowing easy removal for cleaning and quick water change.

The Tissue Bath has a water temperature range of ambient + 5°C to approximately 65°C under normal operating conditions. The unit has an Orienter Block which has a fixed temperature of approximately 55°C and a Dryer Block which has a fixed temperature of approximately 40°C depending on set water temperature.

### 3. Assembly

#### 3.1 Unpacking

Remove packing materials carefully and retain for future shipment or storage of the unit. Inspect for damage. Complete and return the Warranty Registration Card.

Package should contain 1 each of the following:

- Tissue Floation Bath
- Glass Dish
- Operating Instructions
- Power Cord
- Warranty Card

#### 3.2 Installation

Place the Tissue Floation Bath on a flat and stable surface, preferably away from drafts. Plug the power cord into a power supply that matches the voltage listed on the serial number label on the rear of the unit. Ensure that the surface on which the unit is placed will withstand the radiated heat produced by typical laboratory equipment.

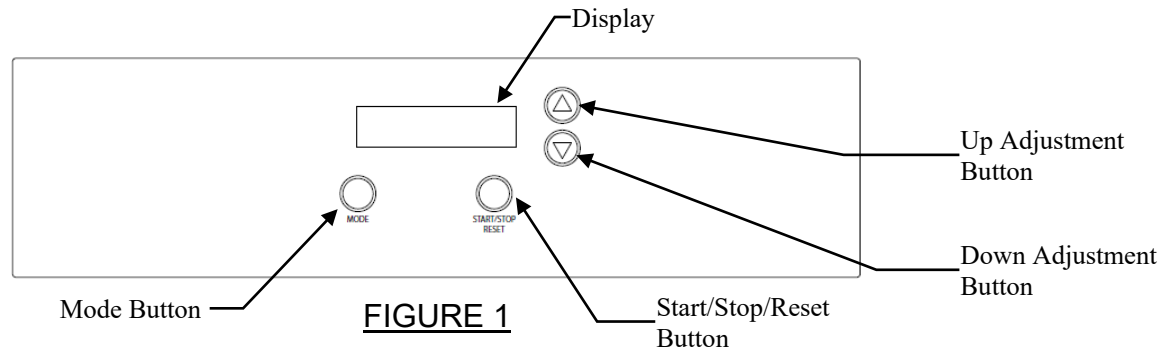
3.3 Unit should be used in a well-ventilated area with a minimum clearance of 4” on sides and rear of unit and 30” above unit.

### 4. Operation

#### 4.1 Controls (see figure 1)

Please note that the Dryer and Orienter Blocks are only available on models 145951 and 145951-2.

<b>Power Switch:</b>	Located on the rear of the unit.
<b>Heater Indicator:</b>	Last character of the display illuminates a white rectangle when the unit is heating.
<b>Display:</b>	Displays actual bath temperature and operating parameters
<b>Mode Button:</b>	Used to toggle between timer and temperature changes.
<b>Start/Stop/Reset Button:</b>	Used to interact with settable timer once that mode is engaged.
<b>Up Arrow Button:</b>	Used to increment the active parameter.
<b>Down Arrow Button:</b>	Used to decrement the active parameter.



## 4.2 Filling the Bath

Fill the glass dish with water only to a minimum depth of 2cm. **Caution: Only water should be placed in the glass dish. No media other than water should be used. Filling the chamber without the glass dish will damage the bath and may pose an electrical hazard.** After filling the glass dish, push the temperature probe (located in the upper right corner of the bath compartment) downward into the water so that the tip is immersed at least 1cm and is not touching the glass dish.

During operation continue to add water to maintain the 2cm water level.

If it is necessary to remove the glass dish from the unit, first turn the unit off. Make sure the temperature probe is moved to its full upright position, and then remove the glass dish.

**Caution: If the unit remains on with the temperature probe in its upright position, or the glass dish is removed or empty, the unit will go into an over-temperature condition.**

## 4.3 Turning The Unit On

- 4.3.1 Using the power cord provided with the unit, connect the female end directly into AC socket on rear of unit. Make sure the power switch on rear of unit is off (O). Connect male end of power cord to grounded electrical outlet.
- 4.3.2 Turn unit on by switching the power switch to the on position (I). The unit will go through a brief startup test, which includes displaying the software revision level.
- 4.3.3 After the start up test is completed, the unit will switch to normal operation mode. The LCD display will show the Actual Temperature of the water (as sensed by the probe) as well as the Setpoint value. **NOTE: It is imperative that the probe arm be positioned such that the probe is in the water, otherwise temperature control will not be accurate and will cause the bath to become much hotter than the setpoint.**

#### 4.4 **Mode Key**

- 4.4.1 When the unit powers up, it defaults to the Temperature Mode, which is indicated on the LCD display by showing the Actual Temperature on the top line and the Temperature Setpoint on the bottom line. The setpoint colon (:) will be flashing, which indicates the Temperature Setpoint is adjustable.
- 4.4.2 When the Mode Key is pressed, the LCD display changes to the Timer Set Mode. This is indicated on the LCD display by showing the Actual Temperature on the top line and the Timer value on the bottom line. The Timer colon (:) will be flashing which indicates that the Timer value is adjustable.

#### 4.5 **Setting Temperature**

- 4.5.1 Press the Mode Key to enter Temperature mode.
- 4.5.2 Using the Up/Down arrow keys, adjust the Setpoint to the desired temperature.
- 4.5.3 Allow at least 60 minutes for the unit to stabilize when making a temperature change.

#### 4.6 **Setting The Timer**

- 4.6.1 Press the Mode Key to enter Timer mode.
- 4.6.2 Using the Up/Down arrow keys, adjust the Timer to the desired time. Time is indicated in minutes and seconds (mm:ss), and the maximum timer setting is 999 minutes and 99 seconds. When adjusting the Time value, there is a speed-up algorithm in the software which accelerates the setting speed.
- 4.6.3 Press the Start/Stop/Reset Key to begin the timer count down. When the timer reaches 00:00, the unit will beep 3 times and the display will alternate between “Cycle Complete”, and the Temperature/Timer display.
- 4.6.4 By pressing and holding the Start/Stop/Reset key for 3 seconds, the timer will reset back to its previous timer setting.
- 4.6.5 If the Start/Stop/Reset key is depressed during the timer countdown, a “Timer Paused” message will be displayed. By pressing the Start/Stop/Reset key the LCD display will switch again and will restart the timer.

#### 4.7 **Over-Temperature Alarm**

- 4.7.1 The unit is equipped with an Over-Temperature Alarm that is activated when the temperature exceeds the Temperature Setpoint by more than 5.0°C for an extended period of time.

When an alarm occurs, the display will alternate between “High Temp Alarm” and the actual temperature. An audible tone will also be heard. The alarm cannot be deactivated until the temperature is within 5.0°C of setpoint.

4.7.2 The Over-Temperature Alarm is factory preset to activate when temperature is more 5.0°C above temperature Setpoint. However, this can be adjusted higher or lower by the user. To adjust the Over-Temperature Alarm setting, turn the unit off and press both Up/Down Arrow keys simultaneously while turning the unit back on. The LCD should display “Deviation Alarm” setting. Using the Up/Down Arrow keys, adjust the Over-Temperature Alarm setting to the desired temperature. Press the Start/Stop key to return unit to normal operating mode and save the setting. Powering the unit off resets the Over-Temperature Alarm to 5.0°C.

**4.6 Dryer Block**

The Dryer Block (if equipped) will always be on. The 2” x 5” slide dryer/warmer block heats to approximately 40°C depending on the temperature that is set.

The Orienter Block (if equipped) will always be on. The 2” x 2” specimen orienter block heats to 55°C depending on the temperature that is set. A brief touch of the prepared slide to the orienter block will instantly flatten wrinkled paraffin sections.

**5. Fault Diagnosis**

<b>Symptom</b>	<b>Possible Cause</b>	<b>Action Required</b>
1. Unit does not operate	<ul style="list-style-type: none"> <li>a. Unit not switched on.</li> <li>b. Unit not plugged into power supply.</li> <li>c. Fuses blown.</li> <li>d. Power supply failure</li> </ul>	<ul style="list-style-type: none"> <li>a. Switch on.</li> <li>b. Plug in, turn on.</li> <li>c. Replace fuses per 8.2</li> <li>d. Check that other electrical appliances on the same circuit are working</li> </ul>
2. Bath temperature does not rise when expected	<ul style="list-style-type: none"> <li>a. Actual temperature is higher than set temperature.</li> <li>b. Temperature control sensor is not positioned in the water.</li> <li>c. Temperature control circuit fault</li> </ul>	<ul style="list-style-type: none"> <li>a. Check set temperature.</li> <li>b. Position sensor in the water.</li> <li>c. Have unit checked by competent person.</li> </ul>
3. Temperature continues to rise when not expected	<ul style="list-style-type: none"> <li>a. Actual bath temperature is lower than set temperature.</li> <li>b. Temperature control circuit fault</li> </ul>	<ul style="list-style-type: none"> <li>a. Check set temperature.</li> <li>b. Have unit checked by competent person.</li> </ul>
4. Lamp not illuminated	<ul style="list-style-type: none"> <li>a. Lamp failure</li> </ul>	<ul style="list-style-type: none"> <li>a. Have unit checked by competent person</li> </ul>

## 6. Accessories

Part Number	Description
904-0013	Glass Dish

## 7. Technical Specifications

This equipment is intended for indoor use and will meet its performance figures within the ambient temperature range of 20°C to 30°C, with maximum relative humidity of 80% (non-condensing). Installation Category II (transient voltages). Pollution Degree 2 in accordance with IEC 664. Suitable for operation at altitudes of up to 6500 feet.

### Specifications:

Temperature Set Range:	(Ambient +5°C) to 65°C
Operating Temperature Range:	20°C to 30°C
Temperature accuracy:	± 1.0°C at 55°C
Stability:	± 0.2°C
Supply Voltage Range:	
145702 and 145951	115V ± 10%, 60 Hz
145702-2 and 145951-2	230V ± 10%, 50/60Hz
Power Rating:	324W
Heating Rate:	Ambient to 55°C within 45 minutes

## 8. Maintenance and Service

All Boekel laboratory products are designed to comply with IEC1010-1. No routine maintenance is required. There are no user serviceable parts in this product.

### 8.1 Cleaning

Disengage power cord prior to cleaning. The glass dish has molded handles to allow removal for easy cleaning. Paraffin build-up should be avoided around the top area of the Tissue Bath. Paraffin and liquids should also be cleaned as quickly as possible from the black chamber area to prevent glass dish heating problems. The outer casing may be cleaned with water and a damp cloth. Do not submerge or immerse the Tissue Bath in water. Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check that the proposed method would not damage the equipment.

### 8.2 Replacement of Fuses

There are two supply fuses located in the fuse drawer. To replace the fuses:

- Disconnect the unit from the power supply.
- Remove the plug from the socket in the back of the unit.
- Pull back on the fuse drawer.
- Pull out the fuse drawer.
- Check and replace with the correct fuses if necessary. The fuses must be ¼" x 1 ¼" fast acting, rated 4A and 250V.
- Push the fuse drawer back in. Reconnect unit to the power supply.



**9. Warranty**

When used in laboratory conditions and according to these operating instructions, Boekel Scientific warrants this product to be free of defective material and workmanship for a period of two years from the date of manufacture. The liability of Boekel Scientific for any defective equipment during the warranty period shall be limited to the repair of such equipment or replacement thereof without charge for parts or labor.

**10. Service**

It is required to obtain a Returned Material Authorization (RMA) number before any Boekel products are returned for any reason. A Decontamination Certificate must be completed, signed by the user, and returned to Boekel Scientific prior to receiving the RMA number. Please be sure to mark the outside of the returned goods package with this RMA number to ensure prompt handling.

Boekel Scientific  
855 Pennsylvania Blvd.  
Feasterville, PA 19053  
PHONE: (215) 396-8200 or (800) 336-6929  
FAX: (215) 396-8264  
EMAIL: [Boekel-info@boekelsci.com](mailto:Boekel-info@boekelsci.com)