
# RapidFISH
# Models 240200 and 240200-2
# Operating Instructions

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## 1.0 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.

- Read this entire manual before using the slide hybridization oven.
- Use only approved accessories. Do not modify system or components. Any alterations or modifications to your incubator may be dangerous and will void the warranty.
- Intrinsic protection may be impaired if the unit is used in a manner which is not specified in this manual.
- Do not position the equipment so that it is difficult to operate the disconnecting device.

- 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 for 48 hours before connecting it to the supply voltage. During drying out, the intrinsic protection may be impaired.
- Connect only to a power supply that provides a safety ground terminal.
- Do not check temperature by touch. Use the temperature display or a thermometer.
- Do not touch surfaces that become hot.
- Ensure that the power supply cord plug is easily accessible during use.
- Do not block or restrict ventilation slots. Allow at least 3" clearance around the entire unit.
- If liquid is spilled inside the unit, disconnect it from the power supply and have it checked by a competent person.
- This product must be used with a power supply cord that is rated for a minimum temperature of 90°C and that complies with National and Local certification requirements.
- Do not use with flammable, corrosive, or hazardous material.
- Never leave the unit unattended.

- Do not mount equipment on a surface of flammable material due to a hazard that could be caused by hot items falling from the equipment when the door is opened.

## 2.0 Intended Use of Product

The Boekel Scientific RapidFISH is designed for use in slide hybridization and to simplify Flourescent In-Situ Hybridization (FISH) procedures for FFPE samples, cell suspensions and other tissue preparation procedures. FISH testing is used worldwide to identify markers in the form of DNA/RNA.

## 3.0 Installation

### 3.1 Unpacking the Unit

Remove the packing materials carefully, and retain for future shipment or storage of the unit. Inspect for damage. Report all shipping damage to the carrier immediately. Shipping damage is covered by the carrier and repair/replacement for shipping damages must be coordinated through the carrier. Complete and return the Warranty Registration Card or you may also complete this Warranty Card online at www.boekelsci.com.
The package should contain:

- RapidFISH
- Power line cord
- Operating Instructions
- One tray assembly

### 3.2 Set up

Place the RapidFISH on a flat and stable surface, preferably away from drafts with at least 3" clearance around unit. Ensure that the surface on which the unit is placed will withstand the radiated heat produced by typical laboratory incubators and ovens. Units are stackable and can be stacked without impeding airflow or ventilation. If stacking units on top of each other, ensure compliance with local codes and safety in doing so.

Fit the power line cord into the IEC power socket on the rear of the unit. Plug the power cord into a power supply that matches the voltage listed on the serial/electrical information label on the rear of the unit.

## 4.0 Control Panel Overview

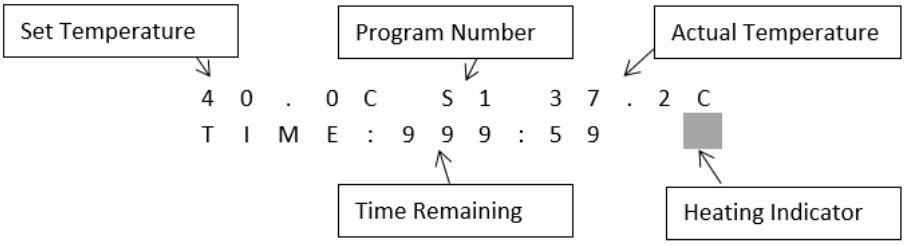
A. Program – Cycles through the different programmed steps, "S1", "S2", "S3", and "HT".

B. Set – Allows changing of time and temperature values. Used to toggle between time adjustment and temperature adjustment.

C. Start/Stop/Reset – Starts, stops, and resets the programmed runs. Single press of the button will start, stop, or resume the programs. Pressing and holding will reset the sequence. (Programs follow the sequence of S1 → S2 → S3.)

D. Up/Down Arrow Keys – Used to increase or decrease the selected variable. Press and hold for rapid change.

E. LCD Display – Shows set temperature, program number, actual temperature, time remaining, and heating indicator.




F. When the unit is in full heat mode, a white square on the far right of the lower display line will illuminate. When the heater is maintaining temperature, the white square will flash. When the heater is off, the white square is no longer illuminated.

## 5.0 Operation

### 5.1 Turning the Unit On

5.1.1 Using the power cord provided with the unit, connect the female end directly into AC socket on rear of unit. Make sure power switch on rear of unit is off (0). Connect male end of power cord to grounded electrical outlet.

5.1.2 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.

5.1.3 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 chamber as well as the Setpoint value. The unit will start to achieve setpoint temperature without any operator intervention.

## 5.2 Modes of Operation

5.2.1 The unit can be run in Hold Temperature (HT) or Program mode, which allows up to 3 steps of time and temperature values to be run sequentially.

5.2.2 The Program key cycles through the different programs (S1 → S2 → S3 → HT → S1 and so forth).

5.2.3 In HT mode, the RapidFISH will hold temperature at the desired setpoint.

5.2.3.1 Press Set key to allow changing of temperature setpoint.

5.2.3.2 Use Up and Down arrow keys to change value.

5.2.3.3 Unit will maintain temperature at setpoint until another mode is selected or the temperature setpoint is changed.

5.2.4 In Program mode, the unit will move from step 1 (S1) to step 2 (S2) then to step 3 (S3) in succession and beep when the entire program has completed.

5.2.4.1 The Program key cycles through the different programmed steps.

5.2.4.2 Press Set key to allow changing of values. Use Up or Down key to increment or decrement value.

5.2.4.3 Press Set key again to toggle between adjusting set temperature and time remaining.

5.2.4.4 Once all program steps are entered, pressing Start/Stop/Reset will begin the program. Pressing Start/Stop/Reset again will pause the program. Pressing and holding Start/Stop/Reset will reset the program to S1.

5.2.4.5 Temperatures can be adjusted from ambient or 18°C (whichever is greater) to 75°C.

5.2.4.5.1 S2 and S3 can be turned off in the program by adjusting the temperature value down to the value below 18.0°C, which will display the word "OFF".

5.2.4.6 Times can be adjusted from 000:01 to 999:59 (mmm:ss).

5.2.4.6.1 S2 and S3 can be set to hold indefinitely in the program by adjusting the time value down to the value below 000:01, which will display the word "HOLD".

5.2.4.7 Upon completion of all steps, unit will beep and flash time as 000:00. Temperature will remain at last set temp. Holding Start/Stop/Reset resets the cycle and shows S1 with its time and temperature.

## 6.0 Calibration

6.1 Turn the unit off and allow the interior surfaces to reach ambient temperature. Place a certified reference thermometer in the center of the tray. Ensure the thermometer is not touching any parts of the tray. Boekel calibration kit part number 240550 can be used to assist in the setup.

6.2 Turn the unit on and simultaneously press the Up and Down arrow keys and the Program key to enter calibration mode.

6.3 Allow the unit 60 minutes to achieve calibration setpoint of 40.0°C. Once the 60 minutes have elapsed, the unit will beep once and flash the 40.0°C text on the display. Use the Up and Down arrow keys to match the displayed value to the temperature of the calibrated probe. Press Set key to confirm temperature reading.

6.4 Allow the unit 60 minutes to achieve new calibration setpoint of 60.0°C. Once the 60 minutes have elapsed, the unit will beep once and flash the 60.0°C text on the display. Use the Up and Down arrow keys to match the displayed value to the temperature of the calibrated probe. Press Set key to confirm temperature reading.

6.5 The unit will return to the main screen and can be turned off at this point. Allow the unit to cool before touching any internal surfaces. Once this is done, the probe setup can be removed and normal operation of the slide hybridization oven can be resumed.

## 7.0 Technical Specifications

This equipment is for indoor use and will meet its performance specifications within the ambient temperature range of 10°C to 30°C, with maximum relative humidity of 80%. Installation category II (transient voltages). Pollution degree 2 in accordance with IEC 664. For operation at altitudes of up to 6500 feet (2000 meters).

| | |
|---|---|
| Temperature Range | Ambient +5.0°C to 75°C |
| Stability | ±0.2°C |
| Accuracy | ±0.5°C |
| Temperature Display Resolution | 0.1°C |
| Supply Ratings<br>Model # 240200<br><br>Model # 240200-2 | <br>115 V AC ±10%; 50/60 Hz; 2.0 Amps<br><br>230 V AC ±10%; 50/60 Hz; 1.0 Amps |
| Environmental Conditions for Operation: | Intended for indoor use only.<br>Temperature: 10°C to 30°C<br>Humidity: 10% to 80% non-condensing<br>Atmospheric Pressure: 99.5 to 103.5kPa |
| Overall Dimensions (W x D x H) | 11" x 16" x 8" |

## 8.0 Additional Accessories Available for Purchase

| Item # | Description |
|---|---|
| 240550 | Calibration Kit |

## 9.0 Fault Diagnosis

| Symptom | Possible Cause | Action Required |
|---|---|---|
| Unit does not operate | a. Unit is not switched on<br>b. Unit is not plugged into a power supply<br>c. Fuses blown<br>d. Power supply failure | a. Switch the unit on<br>b. Plug in, switch on<br>c. Replace fuses (see Section 10.2)<br>d. Check that other electrical appliances on the same circuit are working |
| Chamber temperature does not heat when expected | a. Actual temperature is higher than Set temperature<br>b. Temperature control circuit fault<br>c. Circulation Fan failure | a. Check set temperature<br>b. Have unit checked by a competent service person<br>c. Have unit checked by a competent service person |
| Temperature continues to rise when not expected | a. Actual temperature is lower than Set temperature<br>b. Temperature control circuit fault<br>c. Circulation Fan failure | a. Check set temperature<br>b. Have unit checked by a competent service person<br>c. Have unit checked by a competent service person |
| Unit turns on but no text is seen on the display | d. Contrast adjusted too far up or down | d. Adjust contrast up or down until text becomes visible (see Section 11) |

## 10.0 Maintenance and Service

All Boekel laboratory products are designed to comply with IEC61010-1. No routine maintenance is required.

### 10.1 Cleaning

Prior to cleaning, turn power off, disengage power cord and allow unit to return to ambient temperature, if still warm. Both the inner chamber and outer housing can be cleaned with a cloth dampened with water and mild soap. Do not use spray cleaners that might leak through the chamber at the seams and damage electrical components. Do not use chlorine-based bleaches or abrasives, as they will damage the stainless steel interior. Do not immerse the slide hybridization oven in water.

### 10.2 Decontamination

The end user shall ensure that:

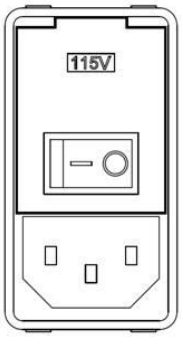
- appropriate decontamination is carried out if hazardous material is spilled onto or into the equipment,
- no decontamination or cleaning agents are used which could cause a hazard as a result of a reaction with parts of the equipment or with material contained in it, and
- the manufacturer is consulted if there is any doubt about the compatibility of decontamination or cleaning agents with parts of the equipment or with material contained in it.

### 10.3 Replacement of Fuses

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

- Turn power switch to the off (O) position
- Disconnect the unit from the power supply
- Remove the line cord from the power entry module on the back of the unit (Figure 2 – below)
- Pull back on the fuse drawer catch (located on top of power entry module)
- Pull out the fuse drawer
- Check and replace with the correct fuses if necessary. The fuses must be 5mm x 20mm Quick Acting, rated at 2.0amp 250V for 115V units, and 1.0amp 250V for 230V units.

- Push the drawer back in and reconnect the unit to the power supply.
- Verify correct voltage reading is displayed in the fuse window located above the on/off switch (illustrated below) after fuse replacement before connecting to the power supply.




## 11.0 Contrast Adjustment

The contrast of the display can be adjusted by holding the Program key and pressing the Up or Down arrow to adjust the contrast up or down, respectively. Care should be taken to avoid adjusting contrast so far in one direction that the text on the display becomes unreadable.

## 12.0 Warranty

When used in laboratory conditions and according to these operating instructions, Boekel 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 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.

## 13.0 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 consult the manufacturer or his agent if there is any doubt about the compatibility of decontamination or cleaning agents. Please be sure to mark the outside of the returned goods package with this RMA number to ensure prompt handling.

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