Thermal-Lok™ Dry Heat Bath Instruction Manual

2510-1102
Thermal-Lok™ Dry Heat Bath

The USA Scientific Thermal-Lok™ Dry Heat Bath is a highly accurate, microprocessor controlled, dry block heating unit with two aluminum blocks. The dry heat bath provides uniform temperature control for heating microtubes, test tubes and other vessels, including microplates and slides. Each dry heat bath has a bright **green** LED display, easy to set temperature and time controls and comes complete with a block lifter.

Specifications	**1 Block Dry Bath 2510-1101**	**2 Block Dry Bath 2510-1102**	**4 Block Dry Bath 2510-1104**
Temperature range	Ambient +5°C to 150°C	Ambient +5°C to 150°C	Ambient +5°C to 150°C
Increments and display resolution	0.1°C	0.1°C	0.1°C
Temperature uniformity	+/-0.2°C	+/-0.2°C	+/-0.2°C
Temperature accuracy	+/-0.2°C	+/-0.2°C	+/-0.2°C
Size w *x* d *x* h (in.) / Weight	7.8 x 9 x 3.2 (8 lbs)	8.7 x 10.3 x 3.2 (9 lbs)	8.7 x 14 x 3.2 (10 lbs)
Electrical 115/230 VAC 50/60 Hz	350 watts	600 watts	1000 watts
Timer function / resolution	Off (untimed) or on to 999 minutes in 1 minute increments	Off (untimed) or on to 999 minutes in 1 minute increments	Off (untimed) or on to 999 minutes in 1 minute increments

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SET UP AND OPERATION

- Place the dry heat bath on a stable flat surface away from air vents or equipment exhaust vents.
- Plug the dry heat bath into a properly grounded outlet of the correct voltage.
- Insert the block(s) into the heating well using the block lifter. **Caution: blocks may be hot!** Using the switch on the back of the unit, turn on the power. The dry bath will make a "beep" sound, illuminate each digit on the display left to right and briefly illuminate the **LED display** while it performs a unit test. After the unit test, the display will begin showing the block temperature and the unit will begin heating the block to the previously set temperature. A flashing **red LED Heating** light indicates the block is heating.

SETTING THE TEMPERATURE

Whenever the **green Temp-Run** lamp is illuminated and the display shows the well temperature, the temperature can be set or changed by using the up or down arrow keys.

Once the desired temperature is displayed, the dry heat bath will illuminate the **red Heating** light and automatically begin heating to the set temperature. The display will show the actual well temperature as the unit heats. As the set temperature is approached, the **red Heating** light will begin cycling on and off. Once set temperature is reached the **green Temp-Run** light appears and **red heating** lights appear constant until set time is over. At the end of the run the display will state "over".

Display showing "**over**"

After equilibrating at the set temperature, the display may show a variation of +/-0.1°C around the set point. When the temperature is set below the current well temperature the dry heat bath will show the current well temperature and not illuminate the **red Heating** light.

A temperature setting is automatically remembered if power is turned off or lost.

WARNING!

CAUTION: Hot surfaces, especially on the block, can cause serious injury or burns.
CAUTION: Do not put water or liquids into the well as shock, serious injury and death may occur.
CAUTION: Do not heat flammable or explosive substances as serious injury and death may occur.

USING AND SETTING THE TIMER

Thermal-Lok™ Dry Heat Baths come with a built-in digital timer function that turns off the heat and sounds an alarm. The alarm will continue until it is manually turned off.

Once the desired temperature has been set, press the **Mode** button to place the dry bath into the timer set mode. This will illuminate the **red Timer** lamp and extinguish the **green Temp-Run** lamp. Use the arrow keys to set the desired time of operation in one minute increments. Once the time is set, the dry bath will automatically begin timed operation. The display will now count down the minutes set. Alternatively you can press the **Mode** button and the display will show the well temperature and illuminate the **Temp-Run** lamp.

When the time has expired the dry bath will turn off the heating function and begin sounding a "5-beep" alarm. The user must **turn off the dry bath** using the power switch in the back of the unit **to shut off the alarm.** The dry bath may then be turned back on to begin another timed heating cycle.

The timer setting is automatically remembered when the unit is turned off or if the power is lost.

Note: You must set the time to "00" on the display to allow the dry bath to be operated in a normal, continuous operation mode without the timing function.

USER CALIBRATION FUNCTION

Thermal-Lok™ Dry Heat Baths are calibrated at the factory and are highly accurate. If necessary, they may be calibrated at the lab to match certified lab reference thermometers or reference temperature sensing meters. Adjusting unit calibration should only be done with certified thermometers or temperature sensors with accuracy certificates. Include any known accuracy offsets in the temperature reading. Use the following procedure to calibrate the dry bath to a certified reference thermometer.

1. Start with the unit turned off. Press and hold down the Mode button and then turn the unit on using the power switch.
2. The display should briefly show a number between 1000 and 5000 indicating calibration mode.
3. When the display shows the well temperature, set the temperature to the desired calibration temperature point using the control knob.
4. Allow about 30 minutes for the dry bath to equilibrate to the desired calibration temperature. The dry bath display will begin flashing when it has reached the temperature calibration point and is ready for calibration.
5. After the display begins flashing, use a **certified** reference thermometer or reference temperature sensor to check the temperature of the block or sample. If the reference thermometer shows a difference from the display, you can adjust the display to match the reference thermometer by using the control knob.
6. After using the reference thermometer and making necessary adjustments, press the **Mode** button to exit the calibration mode. The dry heat bath will then be calibrated to the reference thermometer at that temperature point.

WARRANTY

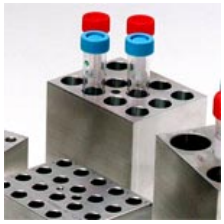
This Thermal-Lok™ Dry Heat Bath from USA Scientific Inc. comes with a 2 year warranty.

THERMAL-LOK™ HIGH GRADE ALUMINUM BLOCKS

2520-0000 24-place block holds both 1.5 and 2.0 ml tubes.
Measures 3" W x 3.75" D x 2" H.

2524-0000 24-place block holds 0.5 ml tubes.
Measures 3" W x 3.75" D x 2" H.

2520-1500 24-place block with conical wells for 1.5ml microcentrifuge tubes only.
Measures 3" W x 3.75" D x 2" H.



2512-0000 12-place block holds 15 ml tubes.
Measures 3" W x 3.75" D x 3.25" H.

2505-0000 5-place block holds 50 ml tubes.
Measures 3" W x 3.75" D x 3.25" H.

**Custom blocks are available upon request.