

BK40 M

CRYOSTATIC BATH

TB300 M

THERMOSTATIC BATH



BK40 M

TB300 M

The **BK40 M** and **TB300 M** are thermostatic baths used for temperature probes calibration in the laboratory.

They are equipped with a ducted propeller stirring and heating device that guarantees high radial & axial uniformity, these features, combined with a high immersion depth, make them suitable for high-precision testing and metrological confirmations.

All wetted metal components are made from stainless steel, making them suitable for the use of different filling liquids (water, glycol, silicon oils) depending on the operating range of the liquid used.

Both the models are built with a thermoregulation tank equipped with an emptying device and a maximum overflow level to drain excess liquid in the event of thermal expansion of the liquids used.

The control cabinet, containing all the control, regulation and display electronic devices, is located in the upper part of the thermostatic baths right above the calibration area, the cabinet is accessible from the rear for easy maintenance.

All thermal parts are adequately insulated and encapsulated in a painted metal framework equipped with wheels for easy positioning. The Baths are equipped with a PID microprocessor-based controller with a resolution up to 0.01°C, unit setting in °C, °F, & K, programming of ascent/descent ramps and storage of the thermostats operative temperature.

The Baths are also available in the **2I version**, in which they are equipped with an acquisition card having two configurable inputs (Pt 1000, Pt 100 3/4 wires, thermocouples E, J, K, N, R, S, T, B with automatic compensation of cold junction). The REF input is provided for the reference sample probe, thus obtaining a complete calibration system which can be certified by Accredia centres, in compliance with ISO 9000 regulations. The EXT input is provided for probes that are being tested; hence, the instrument can display the temperature of the well, the temperature of the sensor to be checked and the temperature of the reference sample probe, at the same time.

APPLICATIONS:

- Laboratory control and calibration of temperature sensors in accordance with ISO 9000
- Control of thermostats

MAIN CHARACTERISTICS:

BK40 M

- Operating range -35°C (-31°F) / +125°C (257°F)
- Useful calibration dimensions: DN 105 mm depth 340 mm tank capacity 10L
- Stainless steel made mixer, 80W electric motor with ducted propeller and coaxial Inconel heating element
- Standalone refrigeration system consisting of a sealed compressor unit, air condenser and direct expansion in evaporator in cooling coil. Nominal output @ 20°C: 600Fr/h
- Safety level switch

TB300 M

- Operating range: Ambient temp. /+ 300°C (572°F)
- Useful calibration dimensions: DN 123 mm depth 340 mm; tank capacity 10L
- Stainless steel made mixer, 80 W electric motor with ducted propeller and coaxial Inconel heating element
- Copper made cooling coil
- Maximum temperature safety thermostat
- Safety level switch

CONTROL PANEL 2I VERSION



Panel with bushings for reference and sample probes

TECHNICAL CHARACTERISTICS

- Sheet metal supporting structure with stainless steel or fiberglass cover plate
- Models are equipped with adjustable holders to support the probes under test and glass thermometers
- RS232 serial interface for PC control with Aq2Sp2 software

BK40 M



Fiberglass cover plate, side stand for probes to be calibrated and safety level switch

The software Aq2Sp2 allows:

- Complete control of the bath from the PC
- Manual or automatic temperature probe calibration

TB300 M



Stainless steel and Anticorodal cover plate, side support for probes to be calibrated and safety level switch

- Automatic control of thermostats
- Filing and printing of the results obtained, in compliance with ISO 9000 Standards

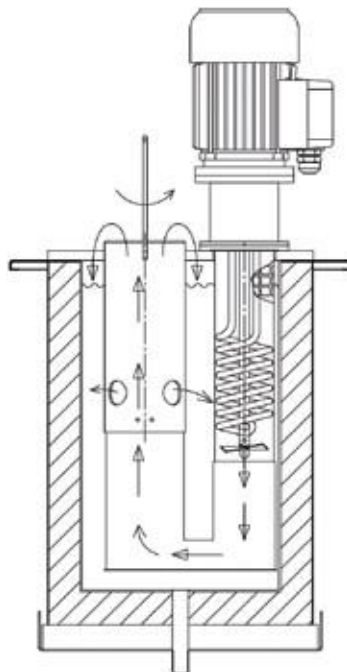
FLUID LEVEL ADAPTER



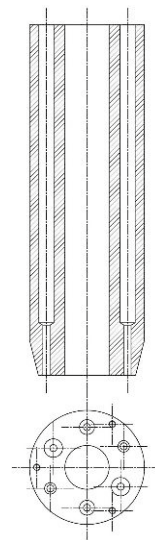
The fluid level adapter is available on demand for both models of thermostatic baths and is intended for professional use in laboratories or to test full-immersion glass thermometers. The device, permanently applied inside the tank, consists in an ascending tube to convey the bath fluid through the test well from the bottom to the top of the calibration tank. The operator can vary the overflow rate in relation to the viscosity of the liquid simply rotating the adapter tube. Optionally it's possible to order the clear adapter cover to reduce heat losses through the outside.

With these devices the performances of the calibrator are greatly improved achieving a great axial stability up to 0.005°C.

The calibration tube has a depth of approximately 330mm and a diameter of 75 mm



EQUALIZATION BLOCKS



Both baths can be provided with equalizing blocks which enable improved stability and uniformity of the calibration zone.

The blocks are Anticorodal made and can be realized with customized number of holes and diameters.

BK40 M (with glycol/water mix)

Technical data *	
Temperature range	-35 ÷ +125°C
Stability	±0.05°C
Display resolution	0.01°C / 0.1°C
Display accuracy	±0.2°C (a 120°C)
Heating Time	2°C/min (-35 / +50°C)
Cooling Time	0.5°C/min (+30 / -20°C)
Operating voltage	230/240 V - 50 Hz
Electric power	2500 W
Weight	70 kg
Size	450 x 450 x 1270 mm
Weight with standard equipment	85 kg
Capacity	10 Lt
Shipping size	500 x 560 x 1400 mm
* Ambient Temperature: 20°C	

Operating range	Recommended fluid	Stability	Uniformity	Cooling time
-35 / +80°C	Glycol 56% +water	±0.05 °C (@ -20 °C)	±0.05°C	0.4°C/min
-30 / +150°C	Silicon oil 47V10	±0.05 °C (@ -20 °C)	±0.1°C	1°C/min
-20 / +125°C	Silicon oil 47V20	±0.05 °C (@ -20 °C)	±0.1°C	1°C/min
-35 / +125°C	Silicon oil 200C5	±0.05 °C (@ -20 °C)	±0.1°C	1°C/min

TB300 M

Technical data *	
Temperature range	+50 ÷ +300°C
Stability	see table
Display resolution	0.01°C / 0.1°C
Display accuracy	±0.2°C (@ 150°C)
Heating time	approx 5°C/min
Operating voltage	230/240 V - 50 Hz
Electric power	1600 W
Weight	44 kg
Size	450 x 450 x 1270 mm
Weight with standard equipment	59 kg
Capacity	10 Lt
Shipping size	500 x 500 x 1400 mm
* Ambient Temperature: 20°C	

Operating range	Recommended fluid	Stability	Uniformity	Heating time
T _{amb} / +80 °C	water	±0.03°C (@ 80 °C)	±0.04°C	2°C/min
T _{amb} / +125°C	Silicon oil 47V20	±0.04°C (@ 100°C)	±0.05°C	5°C/min
+50/ +240°C	Silicon oil 47V100	±0.05°C (@ 200°C)	±0.05°C	6°C/min

The liquids used also play an important role in order to ensure an homogeneous temperature distribution. Silicon oils are characterized by having high thermal conductivity and low viscosity; these liquids are inert, have low vapor pressure, are not chemically decomposable, do not burn, and retain their peculiarities over a wide temperature range.

Type of Fluid	Raccomanded operating range*	Temperature beyond which to use the fume hood**	Point of vapors combustion***	Freezing temperature****
BK40 M				
Glycol 56% +water	-40/+80	70°C	>110°C	-43°C
Silicon oil 200c5	-40/+130	110°C	136°C	-65°C
Silicon oil 47v10	-30/+150	120°C	160°C	-65°C
Silicon oil 47V20	-20/+200	130C	230°C	-60°C
TB300 M				
Silicon oil 47V20	+20/+200	130°C	230°C	-60°C
Silicon oil 47V50	+30/+230	140°C	280°C	
Silicon oil 47v100	+50/+250	170°C	>300°C	
NOTE : * The recommended range is where the viscosity, while not optimal, remains at values that allow the use of Giussani baths even if outside the best laboratory conditions ** Temperature value above which a fume extractor hood should be used *** CAUTION: temperature value at which the presence of an open flame can ignite vapours combustion **** Temperature value below which the liquid changes state and solidifies				

STANDARD EQUIPMENT::

- Holder for probes under test
- Power supply cable – blu power plug
- Thermostat connection cables
- Instruction manual
- RS232 serial interface
- Kit of clamp connection (only 2I version)
- Accredia certificate performed with sample probe

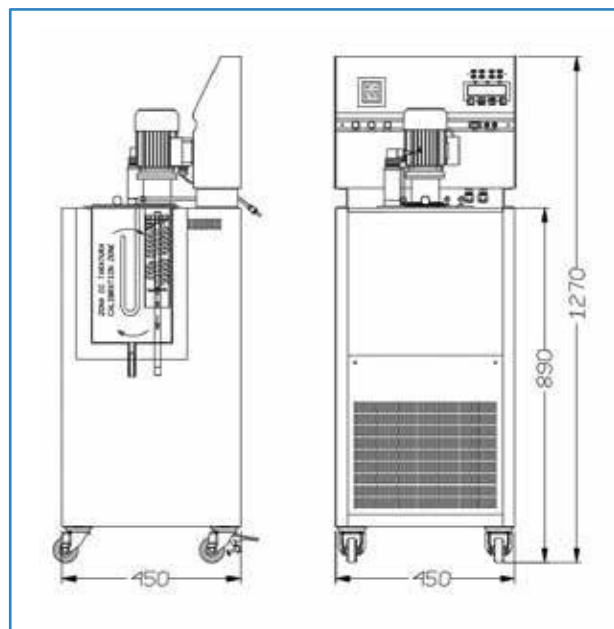
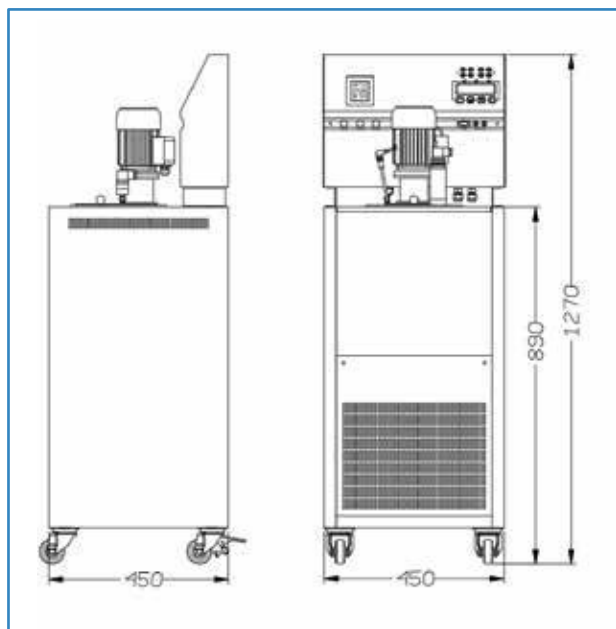
ACCESSORIES ON DEMAND:

- Calibration fluids
- 9 kg Glycol tank (only for BK40 M)
- 9 kg Silicon Oil 200C5 tank (only for BK40 M)
- 9 kg Silicon Oli 47V10 tank (only for TB300 M)
- 9 kg Silicon Oil 47V20 tank
- 9 kg Silicon Oil 47V100 tank (only for TB300 M)
- **2D2568:** Equalization blocks DN 65 x 200 mm with 2 holes DN 10,5 mm and 2 holes DN 6,5 mm, equipped with central rod and sliding perforated cover to vary the immersion position of the block in the two bath models
- Aq2Sp2 Software and RS232 serial cable

MODELS AVAILABLE

BK40/M-00	Standard version
BK40/M-2I	Version with 2 configurable input
BK40/MTR-00	Version with fluid level adapter
BK40/MTR-2I	Version with fluid level adapter and 2 input

TB300/M-00	Standard version
TB300/M-2I	Version with 2 configurable input
TB300/MTR-00	Version with fluid level adapter
TB300/MTR-2I	Version with fluid level adapter and 2 input



CERTIFICATION:

All instruments are supplied with final testing, stability and accuracy report traceable to Accredia standards.

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