

Calibration bath

Model CTB9220

Model CTB9430

WIKA data sheet CT 46.10

Applications

- Calibration in laboratories and in control and instrumentation workshops
- Calibration of short temperature sensors, particularly in the pharmaceutical and food industries
- Simultaneous calibration of several sensors

Special features

- Self-tuning fuzzy logic for high stability and fast heating or cooling
- Large colour screen with full text display and clearly-arranged operator interface
- Five different user languages selectable

Description

Calibration in baths

WIKA calibration baths are an ideal temperature source for the calibration of temperature sensors, both in the workshop and the laboratory.

For calibration, the test items and the standard thermometer are brought to the same temperature within the bath. As soon as a stable temperature has been reached, the test items are read, or their output signals measured, and compared with the standard thermometer.

In order to achieve a small measurement uncertainty within this comparison, a temperature control unit is needed which guarantees a homogeneous spatial temperature distribution and a constant temperature over time within the calibration range. These requirements are fulfilled by these baths. Along with the bath, the bath fluid also plays a significant role. To ensure homogeneous temperature distribution, the selected fluid should have a high thermal conductivity and low viscosity.

Moreover, the fluid should be inert, have a low vapour pressure, should not decompose chemically, not burn, and should maintain its properties over a wide temperature range. In practice, silicone oils have proven themselves here.



Calibration bath model CTB9220

Temperature ranges from -40 ... +300 °C

The calibration baths are available in two different versions:

- Model CTB9220 for 40 ... 300 °C
- Model CTB9430 for -40 ... +200 °C

The instruments are typically used in calibration laboratories and in control and instrumentation workshops for the calibration of thermometers.

Easy to use

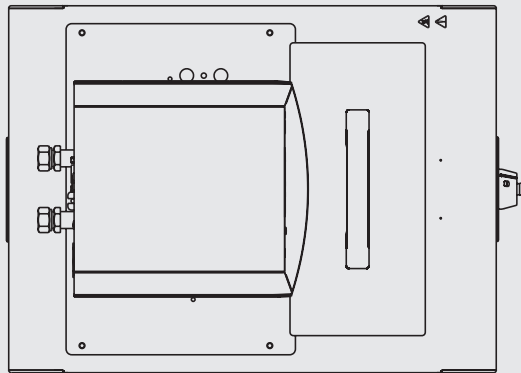
The calibration baths feature a temperature-controlled tank with a usable depth of 200 mm. The maximum immersion depth for the test items of 200 mm reduces heat dissipation errors, resulting in smaller measurement uncertainties.

The large graphical LCD display shows the required operating steps in plain text. Menu items are selected by pressing one of the ten keys at the side of the display, which correspond to the respective functions.

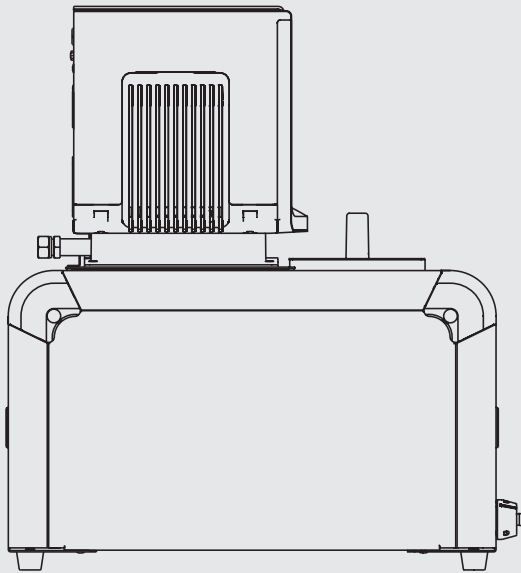
For international use, the user can choose from five different user languages.

Calibration bath model CTB9220

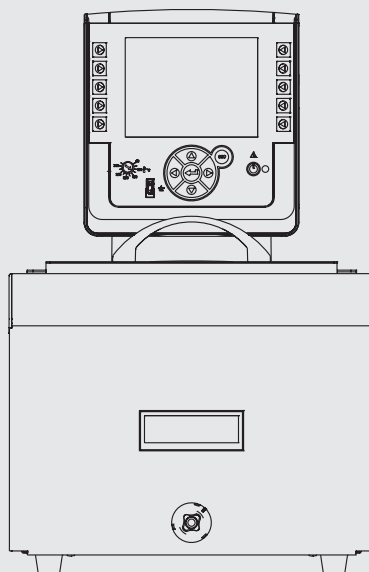
Plan view



Side view

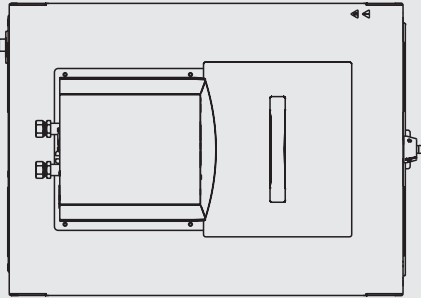


Front view

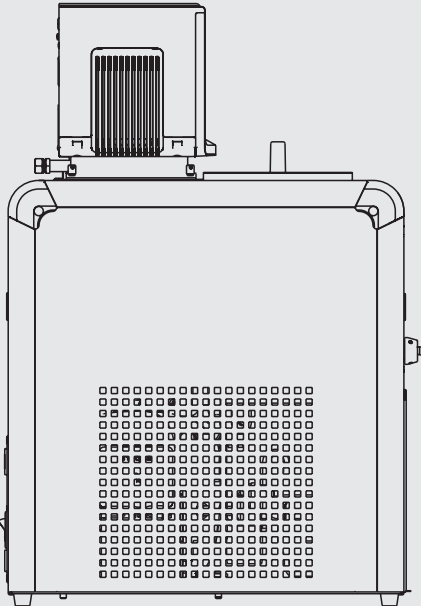


Calibration bath model CTB9430

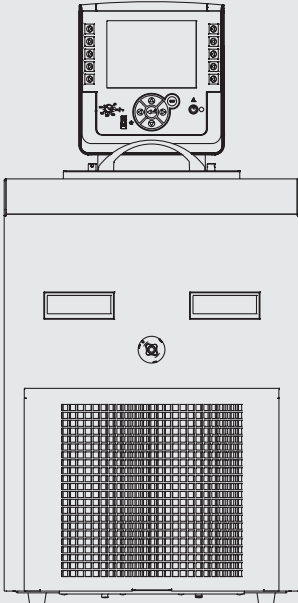
Plan view



Side view



Front view



Calibration baths Models CTB9220 and CTB9430



Calibration bath model CTB9220

Mode of operation

The calibration baths feature electrical resistance heating to produce the high temperatures.

For cooling, the model CTB9430 also offers compressor cooling.

The powerful, combined pressure and vacuum pump produces very fast, uniform mixing of the medium.

Operation

The baths feature a large graphical LCD display, which shows all the required operating steps in plain text. The simple menu navigation enables intuitive operation.

The user language is selectable - the operator can choose between English, German, French, Spanish and Italian.

The individual menu items are selected by pressing keys situated on the side of the display, and which have functions directly assigned to them.

The set and actual temperatures can be read from the display simultaneously, to the nearest 0.01 K. If desired, an external resistance thermometer can also be connected and its value displayed.

The set temperature value can be set directly via the screen and keys.

Standard functions

- Fuzzy logic control
- Self-regulating recirculation pump
- Visible and audible alarm
- Continuous display of date and time
- Low and high temperature limits can be entered
- Failure Identification System (FIS)
- Monitoring of the control sensor and external sensor

Options

- Cover with mounting fixtures
- Power supply AC 115 V, 60 Hz or AC 100 V, 50 ... 60 Hz
- Power cord for Switzerland
- Power cord for UK
- Power cord for USA/Canada



Calibration bath model CTB9430

Specifications		Model CTB9220	Model CTB9430
Temperature range	°C	40 ... 300 ¹⁾	-40 ... +200
Stability	K	0.01 (with water at 70 °C)	
Gradients	K	0.01	
Display resolution	°C	0.01	
Display units		°C/ °F / K - selectable	
Volume	Litres	approx. 7	approx. 12
Bath opening	mm	112 x 240	173 x 183
Bath depth	mm	200	200
Dimensions, W x D x H	mm	321 x 428 x 494	385 x 519 x 787
Weight (empty)	kg	13	56
Power supply	AC V/Hz	230/50 ... 60 100/50 ... 60 115/60	
Interface		USB	
Selectable user languages		English, German, French, Spanish and Italian	
Power consumption			
■ at 230 V AC	VA	3250	
■ at 100 V AC	VA	1250	
■ at 115 V AC	VA	1250	
Heating power			
■ at 230 V AC	W	3000	
■ at 100 V AC	W	1200	
■ at 115 V AC	W	1200	
Heating time at 230 V with silicone oil	min	40 from 25 °C to 200 °C	40 from 25 °C to 200 °C
Cooling power			
■ at 20 °C	W	---	800
■ at 0 °C	W	---	620
■ at -20 °C	W	---	450
Cooling time at 230 V with alcohol	min	---	30 from +20 °C to -20 °C
CE Conformity			
■ EMC directive		2004/108/EC, EN 61326 emission (Group 1, Class A) and immunity (commercial area, i.e. workshops, laboratories or service centres) ²⁾	
■ Low voltage directive		2006/95/EG, EN 61010-1, EN 61010-2-010	

1) AC 100/115 V version only up to 200 °C

2) **Warning:** This is an equipment of the emission class A that is intended for operation in industrial environment. It can cause interference under certain circumstances if operated in other environment e.g. residential or commercial area. We recommend a minimum distance of approximately one meter from EMC sensitive equipment, such as monitors or analytical instruments.

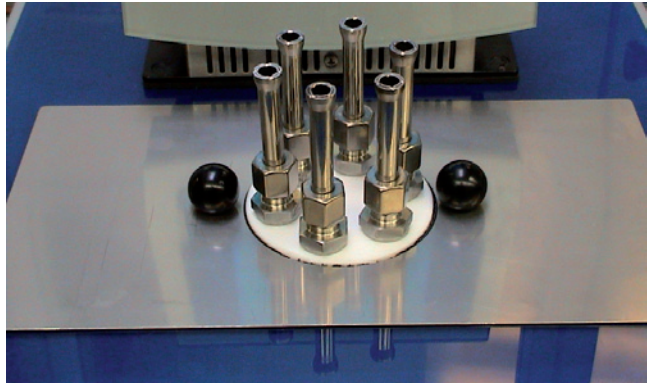
Accessories	Model CTB9220	Model CTB9430
Silicone oil DC 200.05 -40 ... +130 °C, FP = 133 °C	Not recommended	From -40 ... +130 °C readily usable
Silicone oil DC 200.10 -35 ... +160 °C, FP = 165 °C	Not recommended	From -35 ... +160 °C readily usable
Silicone oil DC 200.20 10 ... 220 °C, FP = 230 °C	From 40 ... 220 °C readily usable	From 10 ... 200 °C readily usable
Silicone oil DC 200.50 25 ... 250 °C, FP = 270 °C	From 40 ... 250 °C readily usable	From 25 ... 200 °C readily usable
Mounting fixtures	X	X
Replacement cover	X	X
USB interface cable	X	X

Scope of delivery

- Calibration bath
- 1.5 m power cord with safety plug
- Cover
- Operating instructions

Accessories

- Silicone oil in 10 litre plastic container
- Cover with mounting fixtures
- USB interface cable



Cover with mounting fixtures

Ordering information

Model / Power supply / Mounting fixtures / Power cord / Additional order details

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