



***HEATING CONSTANT TEMPERATURE  
BATHS "VT-PO-01", "VT-PO-02"***

*Operating manual*

**!** *Before using this instrument, carefully read the operating manual.*

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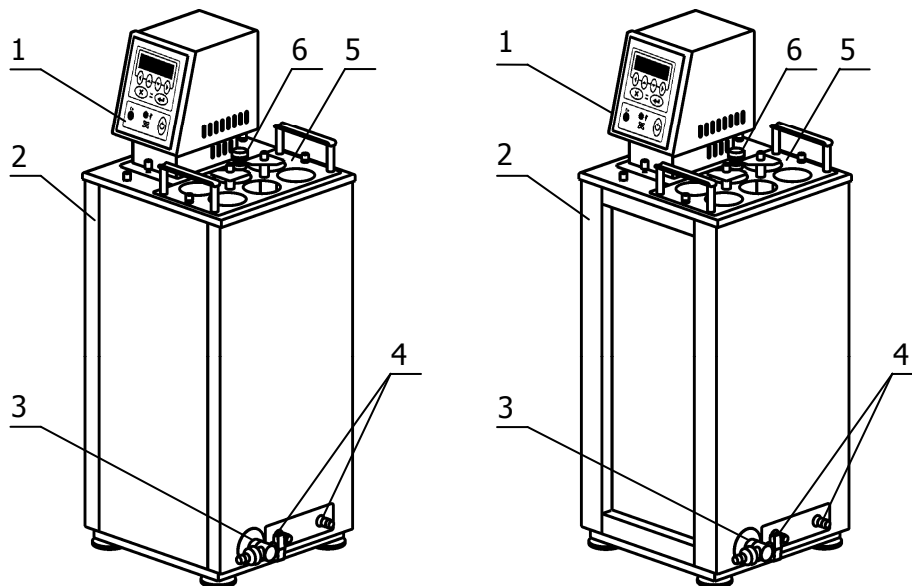
This manual provides the information needed to operate heating constant temperature baths "VT-po-01" and "VT-po-02".

## INTRODUCTION

### Intended use

Heating constant temperature baths "VT-po-01" and "VT-po-02" are intended for standard test method for density, relative density (specific gravity), or API gravity of crude petroleum and liquid petroleum products by hydrometer method according to ASTM D1298, IP 160 or ISO 3675.

### Appearance and parts names



- 1 - heating immersion circulator "M03";
- 2 - stainless-steel bath tank.

Each tank contains:

- 3 - drain valve;
- 4 - built-in cooling coil;
- 5 - cylinder holder.

Adapter for test thermometer 6 is located on the cylinder holder.

The operating principle of the heating constant temperature bath is based on supporting a preset constant temperature of flowing thermal fluid in the bath tank.

The circulation of the thermal fluid and maintaining of the preset temperature by means of heating is provided by immersion circulator 1.

The cooling of the thermal fluid is carried out by means of heat exchange with environment or cooling liquid, passed through built-in cooling coil 4.

## **Environmental Conditions**

Indoor use only.

Ambient temperature: +10...+35 °C.

Air humidity: max. relative humidity 80 % for temperatures up to +31 °C,

Max. mains fluctuation of  $\pm 10$  % are permissible.

## **Safety Recommendations**

Avoid strikes to the housing, vibrations, damage to the operating element panel (keypad, display), and contamination.

Do not store the instrument in aggressive atmosphere.

Protect the instrument from contamination.

Only qualified personnel are authorized to perform configuration, installation, maintenance and repairs of the circulator.

Routine operation can also be carried out by untrained personnel who should however be instructed by trained personnel.

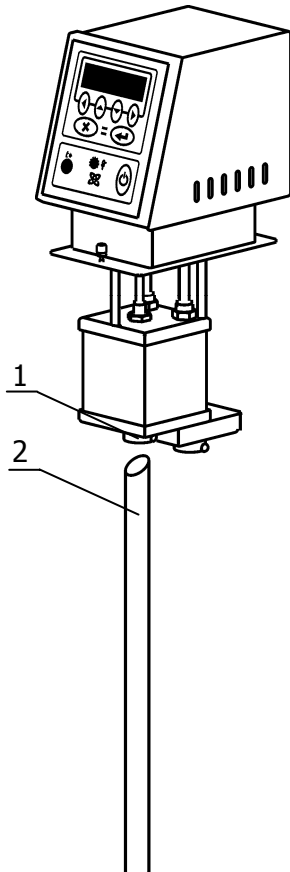
**!** *CAUTION: The instrument is not for use in explosive atmosphere.*

## USING THE HEATING CONSTANT TEMPERATURE BATHS

**!** *NOTE: Throughout this manual, keystrokes are represented in **bold type**; references to messages on the display are in "quotes".*

Before using baths, carefully read the operating manual.

### Preparation

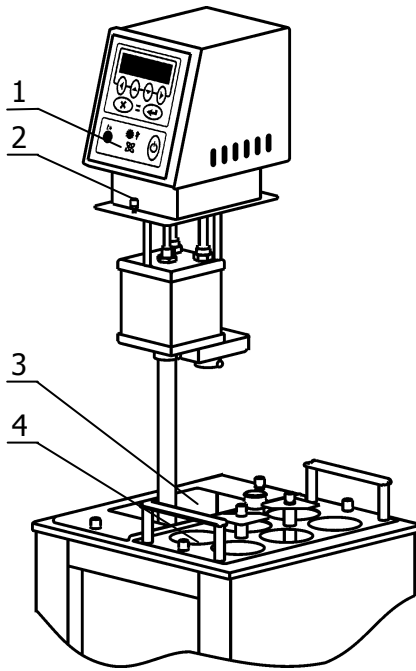


Carefully select a spot for installing instrument with free air access for circulator ventilation. Make sure it is far away from any kind of heat source.

Place the instrument on an even surface with a pad, made of nonflammable material.

Insert output pipe 2 with its taper end up to the stop in corresponding socket 1 and secure it with a screw.

**!** *While setting up the circulator, supply cord should not be connected to the power source.*



Install circulator 1 into the adapter on the bath cover 3. Secure the circulator with screws 2.

Fill up the bath tank with thermal fluid through aperture under bath cover 4. Level of thermal fluid should be 10–20 mm lower than the cover end.

Put a hose on drain valve socket to drain the excess of thermal fluid.

When operating instrument with thermal fluid temperature close to ambient, it might be necessary to provide the cooling by means of build-in coil. In order to do that, connect cooling coil to tap water supply with hoses, attached to the coil connectors. The flow of the cooling water must be even and slightly weak. The cooling is not necessary if thermal fluid temperature is at least 15 °C higher than ambient temperature.

To operate the instrument, read the "M03 Heating Immersion Circulator. Operating manual".

## GENERAL SPECIFICATIONS

Working temperature range:	+15...+100 °C
Set-point resolution	0.01 °C
Display resolution	0.01 °C
Temperature stability	±0.1 °C
Temperature uniformity	±0.1 °C
Digital setting accuracy	±0.5 °C
Digital setting repeatability	±0.05 °C
Heating capacity	2000 W
Bath volume	30 Liters
Dimensions, W×D×H	330×275×775 mm
Bath opening	120×210 mm
Bath depth	540 mm
Size of glass panel (VT-po-02 only)	190×480 mm
Weight	22 kg
Power supply	230 V, 50/60 Hz
Warranty	2 years