



COOLING CONSTANT TEMPERATURE BATH "CRIO-VIS-T-05"

Operating manual

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

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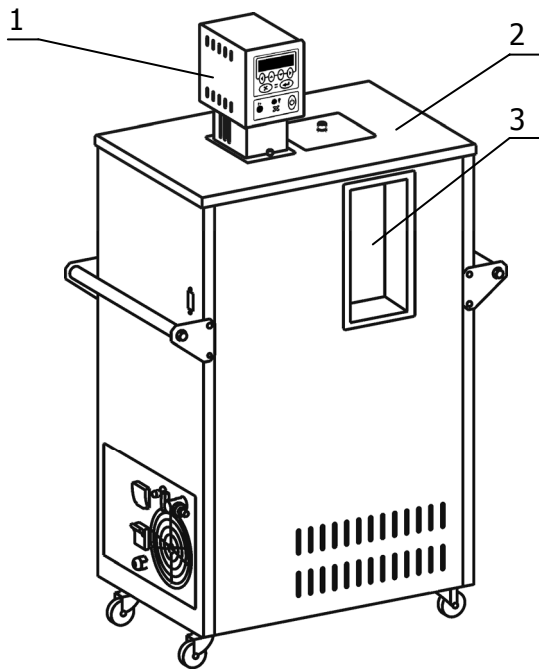
This manual provides the information needed to operate cooling constant temperature bath "CRIO-VIS-T-05" and "CRIO-VIS-T-05-01". Baths differ in the range of working temperature.

INTRODUCTION

Intended use

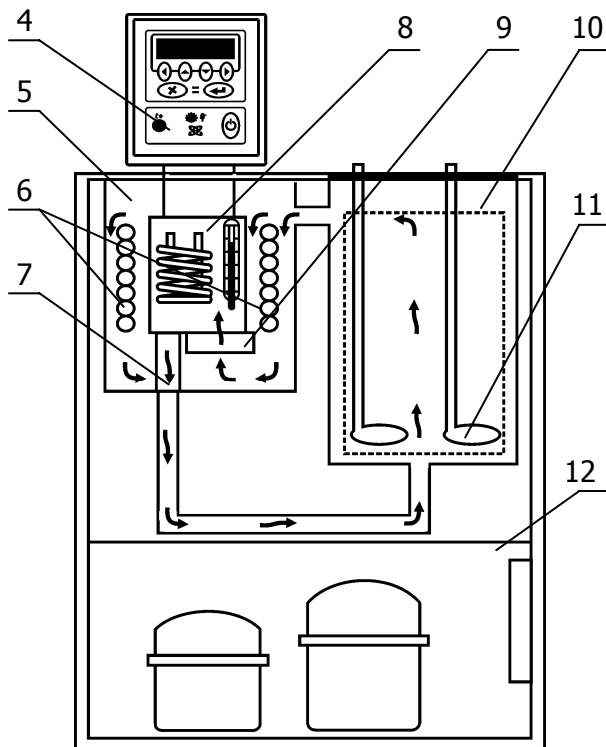
Cooling constant temperature bath "CRIO-VIS-T-05" with insulating anti-fog triple-pane glass window is intended for standard viscosity test of liquids by means of glass capillary viscometers according to ASTM D445, IP 71, ISO 3104 or DIN 51366.

Appearance and parts names



Cooling constant temperature bath "CRIO-VIS-T-05" consists of heating immersion circulator 1 and bath tank 2 with glass window 3. The bath tank contains buffer 5 and operating 10 baths; and refrigerating machine 12. The buffer bath includes heating immersion circulator, output pipe 7 and coil 6 which pumps coolant while operating the refrigerating machine. The front panel of the bath tank contains anti-fog triple-pane window 3.

The operating principle of the bath is based on supporting a preset constant temperature of flowing thermal fluid in the bath tank and providing a good temperature uniformity of the operating bath. The circulation of the thermal fluid is provided by rotary pump 9, located in the heating immersion circulator.



Maintaining of the preset temperature is carried out by means of electronic controller, located in heating immersion circulator 4. Refrigerating machine 12 provides the cooling of the thermal fluid by means of coil 6, located in the buffer bath.

Pump 9 of immersion circulator pours thermal fluid from buffer bath 5 to a chamber with heater and temperature sensor 8. In the chamber thermal fluid temperature is adjusted and poured into operating bath 10 through output pipe 7. Then thermal fluid returns to buffer bath 5.

Viscometers 11 should be installed in the operating bath.

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 ± 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.

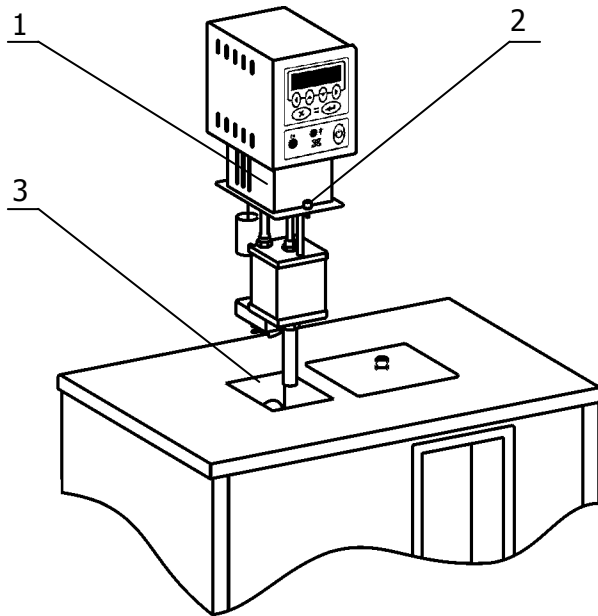
! *CAUTION: The instrument is not for use in explosive atmosphere.*

USING THE COOLING CONSTANT TEMPERATURE BATH

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

Before using the bath, carefully read the operating manual.

Preparation



Carefully select a spot for installing instrument with free air access. The distance between the sides of the bath and another instrument (or walls) should be at least 0.4 m. Make sure it is far away from any kind of heat source.

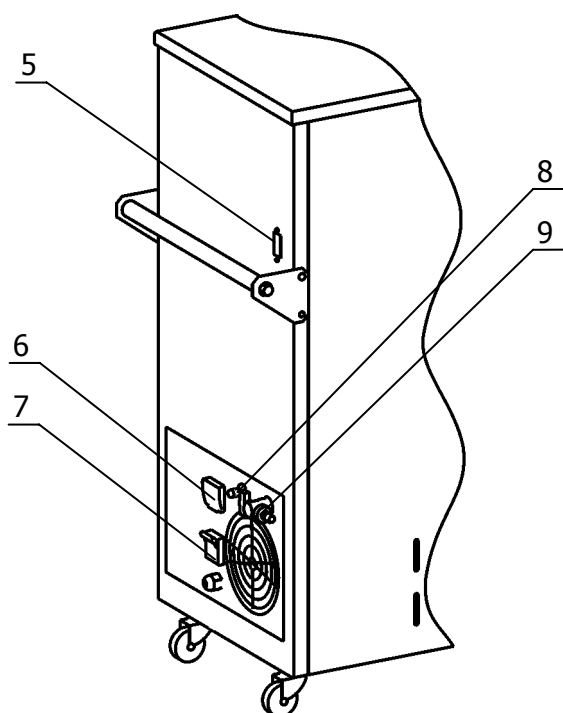
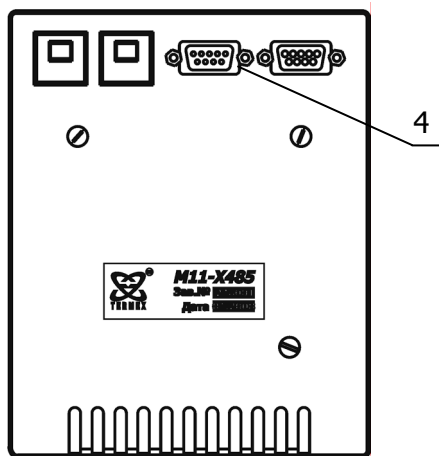
Place the instrument on an even surface with a pad, made of nonflammable material.

Place immersion circulator 1 in the adapter on the cover of bath tank 3. Secure it with screws 2.

Attach draining hose to socket 8. Place the other end of the hose in a tank of at least 1.5 L in volume. This will prevent thermal fluid from spilling when heated or when the bath is being filled.

Fill the bath up with thermal fluid through the hole in the cover. Keep adding thermal fluid before it starts dripping from socket 8.

To check the level of thermal fluid in the bath, connect the circulator to the power supply (220 V) and turn it on. The pump should start draining thermal fluid. Turn the circulator off in a couple of minutes. Disconnect the cable from the power supply. If necessary, add thermal fluid to the operating bath.



Plug the circulator into socket 6. Connect the circulator (connector 4) and the refrigerating machine (connector 5) with the cable from our delivery package. Make sure that automatic switch 7 is off and connect the instrument to the power supply (220 V).

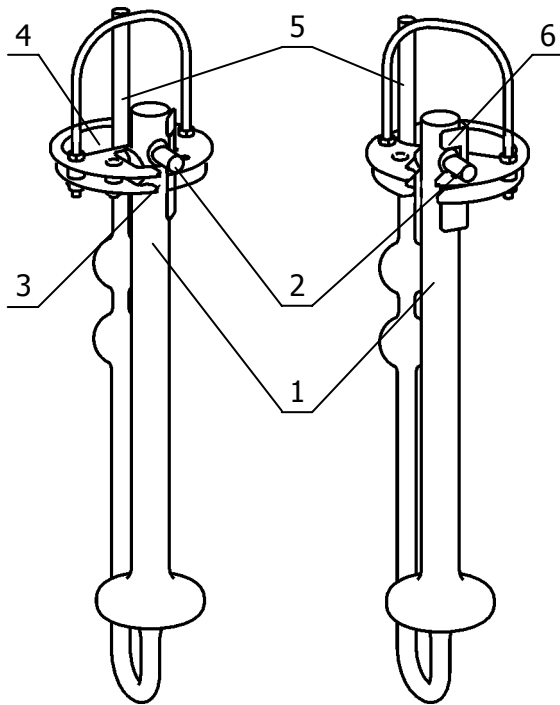
Turn automatic switch 7 on.

When cleaning the instrument, drain thermal fluid through drain valve 9.

To operate the instrument, read the "M11 Heating Immersion Circulator. Operating manual."

Installing viscometers

Holders from our delivery package are intended for installing capillary glass viscometers in "CRIO-VIS-T-05" bath tanks.



To install viscometers:

- Insert viscometer from the bottom, placing mounting pipe 1 into the aperture with a spring; slide side arm 2 into aperture 3. Thin tube 5 should be inserted in aperture 4;
- Adjust viscometer, so that side arm 2 is inserted into the slot of hook 6.

Adding thermal fluid

When the temperature of thermal fluid decreases, its level drops, which might trigger the safety installation. We recommend adding thermal fluid every 30...40 °C of decreasing. For example, when reaching -10 and -50 °C.

When adding thermal fluid, please follow safety precautions since the bath tank contains a glass window.

! Use a funnel to add thermal fluid into the bath. Place the end of the funnel in the bath filled with thermal fluid. Add thermal fluid slowly without spilling, to prevent it from touching the cold glass, which can lead to damage.

GENERAL SPECIFICATIONS

Working temperature range:	
<ul style="list-style-type: none"> • CRIO-VIS-T-05 • CRIO-VIS-T-05-01 	<p style="text-align: right;">–50...+30 °C</p> <p style="text-align: right;">–70...+30 °C</p>
Set-point resolution	0.01 °C
Display resolution	0.01 °C
Temperature stability	±0.01 °C
Temperature uniformity	±0.01 °C
Digital setting accuracy	±0.3 °C
Digital setting repeatability	±0.02 °C
Heating capacity	2000 W
Cooling capacity:	
<ul style="list-style-type: none"> • CRIO-VIS-T-05 at –50 °C • CRIO-VIS-T-05-01 at –70 °C 	<p style="text-align: right;">250 W</p> <p style="text-align: right;">300 W</p>
Bath volume	12 Liters
Dimensions, W×D×H	740×410×1200 mm
Bath opening	140×140 mm
Bath depth	400 mm
Size of glass panel	130×270 mm
Weight	124 kg
Power supply	230 V, 50/60 Hz
Warranty	2 years