

THERMOSPHERE

Instruction Manual



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1. INTRODUCTION

Thank you for acquiring the THERMOSPHERE model from Fungilab S.A.

The Thermosphere is a heating chamber composed of container, spindels and tweezers specially designed to heat up samples to be measured with rotational viscometers.

2. SAFETY INSTRUCTIONS

- It is not the purpose of this manual to outline all of the safety instructions recommended for the use of the Thermosphere and its accessories and samples. It is the responsibility of the user to establish health and safety practices and to determine the application's limits before use.
- Fungilab S.A. guarantees the satisfactory operation of the thermosphere and its accessories only if there have not been any unauthorized adjustments to the mechanical pieces, the electronic components and the software.
- The operator should follow all of the warnings and instructions of this manual to ensure the safe and proper operation of the equipment.
- Do not use the equipment for any other purpose that is not described in this manual.
- Do not use any accessory that is not supplied and approved by Fungilab S.A.
- Do not use the Thermosphere or its accessories if there is any suspicion of malfunction. Do not use the equipment in situations or conditions that can provoke personal injuries or material damage.

Before using the Thermosphere, carefully read and observe the following precautions: those who do not follow them may cause serious harm or personal injuries.

To avoid an electric shock:

- Do not use the equipment without a solid connection to the ground.

3. SYMBOLS USED IN THIS MANUAL

The following symbols are used in this instruction manual:



This symbol warns us of an operational, practical, or similar procedure that, if it is not carried out properly, may damage the equipment.



This arrow indicates additional information that should be used by the user.



This symbol warns us of an operational, practical, or similar procedure that, if it is not carried out correctly, may irreparably damage the equipment. Do not proceed further unless the indicated conditions are fulfilled and have been perfectly understood.

4. CONDITIONS FOR USE

- Indoor use
- Maximum altitude 2000 m.
- Surrounding temperature range: from +5 to 40°C.
- 80% maximum relative humidity for up to 31°C and going as low as 50% of relative humidity for up to 40°C.
- The power source fluctuations should not surpass $\pm 10\%$ of the nominal voltage
- Installation category II
- Pollution level II

5. MAINTENANCE

Always clean all of the parts after each use! Clean the spindles and the container well and then immediately dry them. Make sure that there is not any sample remaining especially in the delicate zones.

Detergents or solvents to clean the spindles and the container:

- For food samples, use lukewarm water and if necessary, use soft detergents (like those which are used at home)
- Other solvents that generally give good results are acetone, gasoline, or something with a high percentage of alcohol
- If you use any other solvent, make sure that it does not corrode the spindles or the protector. The spindles are made in AISI 316.



Warning: Handle the volatile and inflammable solvents with extreme care. It is the user's responsibility to establish safety conditions at work.

6. EQUIPMENT PRESENTATION



- When the equipment package is received, verify and confirm the delivery note. If some discrepancy or problem is found, immediately notify the supplier.
- Check that the model corresponds to the equipment that was ordered.
- Carefully read the instructions.
- All modifications, eliminations, or lack of maintenance of any of the machine's mechanisms, defy directive 89/655/CEE and the manufacturer is not responsible for any damages that may result.

Please, keep the carry-case in a safe location. In the case of needing to transport the equipment or store it for a long period of time, always use the carry-case by placing each part as shown in the drawing. In the case of incorrect packing, where any of the pieces of equipment could suffer some damage, this damage will not be covered by the manufacturer's guarantee. Fungilab recommends using the carry-case provided with the equipment for making any kind of delivery.



Fig.1 standard delivery in carry box

Parts included with the equipment for standard delivery:

- Thermosphere chamber
- Foot or base, 3 height adjustable knobs for the base
- Chamber
- Chamber lid
- Chamber support
- Tweezer
- Power cable
- Instruction manual
- Holding rod enlarger for viscometer
- Adapter to connect viscometer and thermosphere
- Set of spindels (dependence on the model)

7. EQUIPMENT DESCRIPTION



1. Heating chamber
2. 3 height adjustable knobs for the base
3. Control box and display
4. Rotational viscometer (not included on standard delivery)

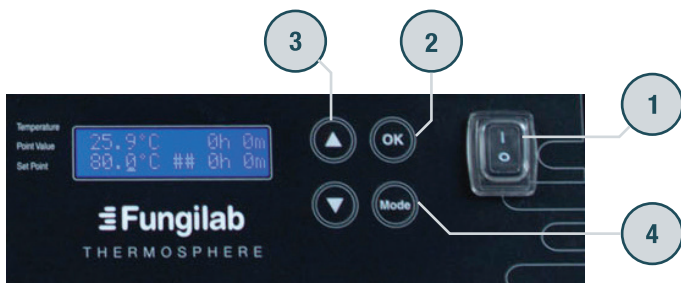


Fig.3 Keyboard details

- | | |
|-------------------|---|
| 1. General switch | 3. Adjustment button |
| 2. Switch On/off | 4. MODE button
(change of parameter) |

7.1. THE KEYBOARD AND SCREEN

Before starting up the machine, one should become familiar with the viscometer controls seen in the previous section. The instrument has a 4 key keyboard (Fig. 3) and a Alphanumeric Display screen on the frontal part ready to use. The keyboard has the following configuration:

To activate the Equipment, swicht the general switcher in mode "I", the LCD screen will illuminate, and the equipment will do an autotest while showing on the screen the software version installed.

Once initialized, the screen will show the following information

1. First row

Real temperature
Symbol * (which means heating is on)
Time

2. Second row

Set temperature - left
On/(##). To indicate if the instrument is on or off – middle-
Set time –right-

8. PARAMETERS SELECTION

The cursor will indicate on the display the preselected temperature. Using the adjustment buttons (3) adjust until the desired temperature-

Touch mode button (4) to move the cursor to the next parameter. Using the adjustment buttons (3) adjust until the desired value-

9. ADVANCED CONFIGURATION

Timer setting

First, adjust the temperature value desired (3).

Press button mode (4): using the adjustment button (3), select the desired time for the equipment to be working.

Note: if you select “0” the equipment works in continuous

Then press OK (2) and the screen will show “on” instead of “##” and the equipment will start. After the indicated time passes the equipment will automatically switch off.

Automatic reset by power failure

In case of power failure, the equipment will switch on automatically with the same parameters it had and the symbol “I” will appear on the screen.

Note: switch the Equipment off correctly: press OK and then press the general switch, if not the Equipment will consider it as a power failure.

10. ACCURACY

Ambient to 100°C	< 1°C
101°C to 200°C	< 1.5°C
201°C to 300°C	< 2.0°C

11. THERMOSPHERE VISCOSITY RANGES (mPa·S)

	ALPHA	SMART	EXPERT	PREMIUM
L MODELS				
TL5	3 – 10K	3 – 10K	1.5 – 30K	1.2 – 30K
TL6	30 – 100K	30 – 100K	15 – 300K	12 – 300K
TL7	60 – 200K	60 – 200K	30 – 600K	24 – 600K
R MODELS				
TR8	50 – 170K	50 – 170K	25 – 500K	20 – 500K
TR9	250 – 830K	250 – 830K	125 – 2.5M	100 – 2.5M
TR10	500 – 1.7M	500 – 1.7M	250 – 5M	200 – 5M
TR11	1K – 3.3M	1K – 3.3M	500 – 10M	400 – 10M
H MODELS				
TR8	100 – 300K	100 – 300K	50 – 1M	40 – 1M
TR9	500 – 1.7M	500 – 1.7M	250 – 5M	200 – 5M
TR10	1K – 3.3M	1K – 3.3M	500 – 10M	400 – 10M
TR11	2K – 6.7M	2K – 6.7M	1K – 20M	800 – 20M

11. WARRANTY PERIOD

FUNGILAB, S.A. guarantee the perfect functioning of this instrument against defects in material or workmanship, when used under appropriate conditions and in accordance with the operation instructions for a period of ONE YEAR from the invoice date of the product.

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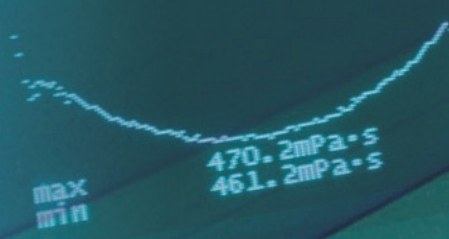
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