Labmate

Hot Plate Magnetic Stirrer LMHMS-803

Operational Manual

www.labmate.com | info@labmate.com

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1. Safety Measures

Kindly read the user manual thoroughly and follow all safety operating procedures before using the instrument.
Keep the manual in a place that is easily accessible to the operator. Ensure that only trained personnel operate the device. Always adhere to applicable safety standards, personal protection protocols, and accident prevention measures.
Make sure the power socket is properly grounded.

Warning – Magnetic Field

Be aware of the potential effects of the magnetic field on the surrounding environment, including risks to pacemaker users.

Warning – High Temperature

Exercise caution to prevent burns when handling the instrument. The exterior may become hot during operation and retain heat even after shutdown. Only move or carry the device once it has fully cooled down.
This instrument is intended for use only with media that are safe during processing and do not react with external energy sources (e.g., light).
Be mindful of possible risks, including:

- Flammable substances or volatile, low-boiling point materials
- Fragile glassware
- Improperly sized containers
- Excessive volume or unstable solution conditions

When working with pathogenic media, always use sealed containers and operate within a properly equipped fume hood.
Note: That even without applying heat, the magnetic stirrer's high-speed rotation can cause the surface temperature to increase.
Consider the risk of contamination and unintended chemical reactions.
Mechanical wear of moving parts may result in particles being released into the media being processed.

2. Introduction

Hot Plate Magnetic Stirrer LMHMS-803 supports maximum stirring capacity of 20 to 20000 ml. Equipped with ceramic work plate for fast, uniform heating. Incorporated with an LED display, PT1000 sensor, and automatic temperature control. It offers temperature range up to 500°C with stirring speed of 50 to 2500 r/min. Our Stirrer is suitable for solution heating, chemical mixing, and lab-scale sample preparation.

3. Features

- Easy operation panel
- Anti-slip base
- Compact unit size

4. Specifications

Model No	LMHMS-803
Maximum Stirring Capacity	20 to 20000 ml
Stirring Speed Range	50 to 2500 r/min
Motor Torque	80 mN·m
Liquid Temperature Range	Room Temperature to 250 °C
Heating Temperature Range	Room Temperature to 500 °C
Temperature Control Accuracy	±0.1 °C
Heating Rate	15 K/min
Programmable Run Time	0 to 9999 minutes
Temperature & Speed Display	LED Display
Sensor Type	PT1000
Work Plate Material	Ceramic
Allowable Ambient Temperature	0 to 40 °C
Allowable Relative Humidity	Less than or equal to 80%
Power Consumption	1050 W
Power Supply	AC 220V ±10%, 50Hz
Heating Disk Size	φ180 × 180 mm
Dimension	330×195×110 mm
Packaging Dimension	350×220×150 mm
Net Weight	5 Kg
Gross Weight	10 Kg

5. Applications

Hot Plate Magnetic Stirrer LMHMS-803 is employed for uniform heating and stirring in chemical, biological, and pharmaceutical labs. It supports sample preparation, reagent mixing, and solution evaporation processes.

6. Instrument Introduction

6.1 Display and Control

Display Screen: Displays the set temperature, current temperature, timer duration, heating status, stirring speed, and other relevant information.

Knobs: Used to adjust temperature, stirring speed, and various functional settings.

The work surface features a ceramic coating, making it well-suited for laboratory heating and stirring tasks.

6.2 Panel Description

Figure-1

1) Display screen shows the set temperature, current temperature, timer duration, heating status, speed, and other operational information.
2) Knob: used for adjusting temperature, speed, and function settings.

7. Installation

7.1 Working Environment

- Do not operate the instrument in explosive atmospheres; it is not designed to be explosion-proof.
- If working with substances that may create explosive mixtures, implement proper safety precautions, such as using a fume hood.
- Always follow applicable safety protocols and accident prevention guidelines when handling hazardous materials to prevent injury or damage.
- Set the instrument on a level, stable, clean, non-slip, dry, and fire-resistant surface.
- Make sure the instrument's feet are intact and free from dirt or damage.
- Keep the power cable and temperature sensor cable away from the surface of the instrument to prevent contact.
- Kindly use in an environment of 0--40°C and humidity below 80%

7.2 Pre Use Check

- Before each use, check the instrument and its accessories for any signs of damage.
- Do not operate the equipment if any components are damaged.
- If the working surface is found to be damaged—such as being scratched, cracked, or corroded—stop using the instrument immediately to avoid further harm.

8. Operations

8.1 Experimental Procedures

Always wear suitable protective equipment appropriate to the type of media being handled, and remain alert to the following risks:

- Liquid splashes or spills
- Ejected or flying components
- Emission of toxic or flammable gases

8.2 Operation Guidelines

Before starting the operation, turn the speed control knob to its minimum (far-left) position, then gradually increase the speed as needed.
Lower the speed immediately if any of the following situations arise:

- The media splashes out of the container due to excessive speed
- The instrument becomes unstable during operation
- The container shifts or moves on the surface
- A malfunction occurs with the instrument

8.3 Power and Shutdown

- In the event of a power outage, the instrument will automatically resume operation when power is restored.
- Verify that the input power supply corresponds to the voltage indicated on the nameplate.
- Ensure the power socket is within easy reach.
- To completely cut off power, unplug the instrument from the socket.

8.4 Instructions

1) When the power is turned on, the display screen lights up. “PV” indicates the current table temperature, and “SV” shows the set temperature.
2) To set the table temperature and timer: Turn the knob clockwise to change the setting value, which stops changing once the desired value is reached. The setting value will flash. Press the knob to confirm; the SV data will then stay lit, indicating the setting is complete. At this point, the timer “0000” at the top of the display flashes. Turn the knob again to set the timer. A setting of “0” means no timing, while values from “1” to “9999” set the timer in minutes. Timing starts once the temperature reaches the set value, and heating stops when the timer ends. After setting the timer, press the knob again to confirm. (If you do not press the knob, the settings will not be saved.)
3) To turn heating on or off: After setting the data, press the knob to activate heating; two symbols  will appear on the display. While heating is active, press the knob again to turn it off, and one symbol  will appear to indicate this.

4) To measure liquid temperature, connect an external PT1000 sensor; the corresponding symbol will appear on the display. Setting the liquid temperature follows the same procedure as described above.
5) When the temperature exceeds 50°C, “H” will be displayed to indicate a high temperature warning.
6) To set the speed: Rotate the knob on the right to select the desired speed. The speed data will flash; press the knob to confirm and the flashing will stop, indicating the setting is complete.
7) Display screen conditions:
   - Without an external sensor connected, no heating or rotation is active.

   - With an external sensor connected, the motor does not rotate, and heating is off.

   - With an external sensor connected, the motor rotates, and heating is applied.

9. Maintenance

- Only qualified maintenance personnel are permitted to open the instrument.
- Avoid placing foreign objects on or applying pressure to the instrument, as this may cause overheating.
- Prevent the instrument and its accessories from being subjected to impact or compression.
- Always keep the instrument's surface clean.
- Ensure adequate clearance is maintained around the instrument.
- The instrument does not require routine maintenance.
- Always disconnect the power supply before performing any cleaning.
- Wear protective gloves while cleaning the instrument.
- Avoid submerging electronic components in cleaning solutions.
- Ensure that no moisture enters the interior of the instrument.

10. Troubleshooting

- Display "HHHH" sensor disconnected, replace the sensor.
- Display "LLLL" sensor short circuit, replace the sensor.
- Display "E01" tested temperature drops too fast alarm
- Display "E02" over temperature alarm

11. Accessories

Model No	Accessory
LMHMS-803-L1	Long Rod
LMHMS-803-S1	Short Rod
LMHMS-803-T1	Temperature Sensor
LMHMS-803-B1	Bracket
LMHMS-803-R1	Stirring Rod (45MM)
LMHMS-803-P1	Power Cord

Labmate Scientific Inc
Email: info@labmate.com | Website: www.labmate.com