



Standard Magnetic Hotplate Stirrer LMHS-C100

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1. Safety Measures



Warning

- Read the operating instructions carefully before use.
- Ensure that only trained staff work with the instrument.



Risk of burn

- Caution when touching the housing parts and the hotplate, which can reach a temperature of 340°C.
- Pay attention to the residual heat after switching off.



Protective ground contact

Make sure that the socket is grounded (protective ground contact) before use.

- 1) When working, wear personal safety guards to avoid the risk of:
 - Splashing and evaporation of liquids.
 - Release of toxic or combustible gases.
- 2) Set up the instrument in a spacious area on a stable, clean, non-slip, dry, and fireproof surface.
- 3) Do not operate the instrument in explosive atmospheres, with hazardous substances, or underwater.
- 4) Gradually increase the speed, reduce the speed if:
 - The stirring bar breaks away due to high speed.
 - The instrument is not running smoothly, or the container moves on the base plate.
- 5) Temperature must always be set to at least 50°C lower than the fire point of the media used.
- 6) Be aware of hazards due to:
 - Flammable materials or media with a low boiling temperature
 - Overfilling of media.
 - Unsafe container.
- 7) Process pathogenic materials only in closed vessels.
- 8) If the case of the stirrer bar is PTFE, kindly note :
 - Elemental fluorine, three fluorides, and alkali metals will corrode the PTFE, and Halogen alkanes will cause its expansion at room temperature.
 - Molten alkali, alkaline earth metals or their solution, as well as the powder in the second and third ethnic of the Periodic Table of Elements, will have a chemical reaction with PTFE when the temperature reaches 300 ~ 400 °C.
- 9) Always disconnect the plug before fitting accessories.

- 10) When the external temperature sensor is needed, the tip of the measuring sensor must be at least 5-10mm from the vessel bottom and wall.
- 11) The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
- 12) The voltage stated on the label must correspond to the main power supply.
- 13) Ensure that the main power supply cable does not touch the hotplate. Do not cover the device.
- 14) The instrument may only be opened by experts.
- 15) Keep away from high magnetic fields.

2. Introduction

Standard Magnetic Hotplate Stirrer LMHS-C100 provides 20-liter stirring volume for large-volume sample processing with single-position rotation. It offers wide speed range adjustable from 0 to 1500 rpm for controlled liquid agitation. It features a 135 mm stainless steel plate with a ceramic coating ensures uniform heat distribution. Equipped with a brushless DC motor delivering stable performance. Our Standard Magnetic Hotplate Stirrer accommodates magnetic bars up to 80 mm in length for versatile mixing needs.

3. Features

- Stirring range from 0 - 1500 rpm Max.
- Stirring quantity is 20 L Max.
- Heating temperature to 340 °C
- Corrosion resistant Stainless steel work plate with ceramic coating
- Safety circuit provides overheating protection

4. Specifications

Model No	LMHS-C100
Work plate Dimension [W x D]	ϕ 135 mm
Max. Stirring Capacity	20 L
Stirring positions	1
Work plate material	Stainless Steel with Ceramic coating
Max. magnetic bar length	80 mm
Speed range	0 – 1500 rpm
Resolution	± 1 rpm
Speed display	Scale
Temperature display	Scale
Heating temperature range	Room temp. to 340 °C
Permissible ambient temperature and humidity	5 – 40 °C, 80 % RH
Overheating protection	350 °C
Temperature display accuracy	± 0.5 °C
Protection class	IP42
Motor type	Brushless DC motor
Motor rating input	18 W
Motor rating output	10 W
Heating output	500 W
Power	530 W
Voltage	100 – 120 / 200 – 240 V, 50 / 60 Hz
Dimension [W x D x H]	160 x 280 x 85 mm
Weight	2.8 kg

5. Applications

Standard Magnetic Hotplate Stirrer LMHS-C100 is ideal for dissolving chemicals, performing titrations, conducting viscosity studies, and heating solutions in laboratory experiments.

6. Instrument Introduction

6.1 Control Elements

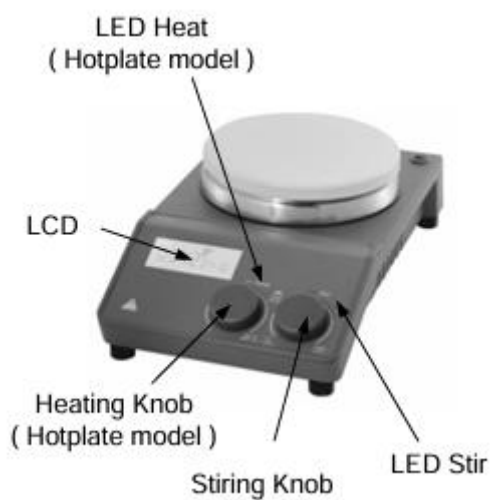


Figure-1 LCD Digital Model

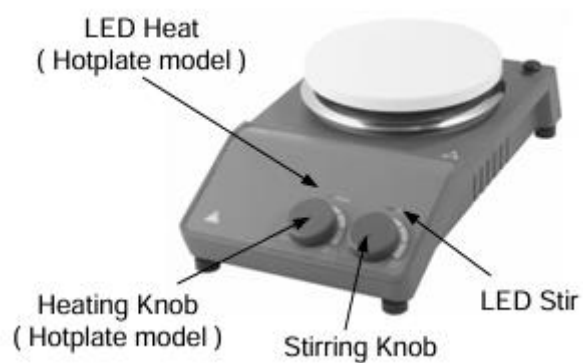


Figure-2 Classic model

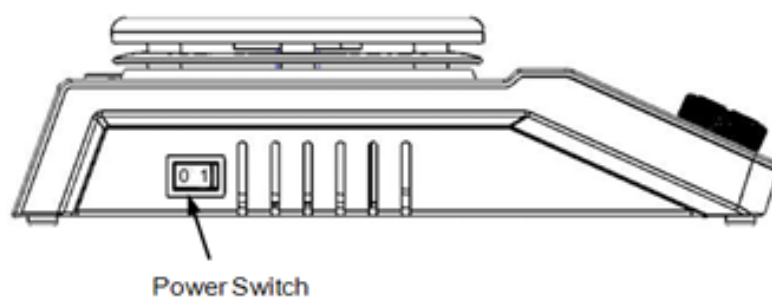


Figure-3

6.2 Model and description

	Item	Description
LCD Digital Model	Stirring knob Stir	Set the rated rotary speed. The function “Stirring” is switched ON or OFF via push ON/OFF the knob.
	Heating knob Heat (Hotplate)	Set the rated temperature. The function “heating” is switched ON or OFF via push ON/OFF the knob.
	LCD	LCDs the real working state and all settings.
	LED Heat (Hotplate)	When the heating function is switched ON , the LED Heat is lit.
	LED Stir	When the stirring function is switched ON, the LED Stir is lit.
	Power Switch	Switch ON or OFF the instrument.
Classic model	Stirring knob Stir	Set the rated rotary speed in the safe stirring range from 0 to 1500 rpm. The function “Stirring” is switched ON or OFF via the knob.
	Heating knob Heat (Hotplate)	Set the rated temperature in the safe temperature range from room temperature to 340°C. The function “heating” is switched ON or OFF via the knob.
	LED heat (Hotplate)	When the heating function is switched ON, the LED Heat is lit.
	LED Power	When the device is switched ON, the LED power is lit.
	Power switch	Switch ON or OFF.

6.3 Display (LCD digital model)

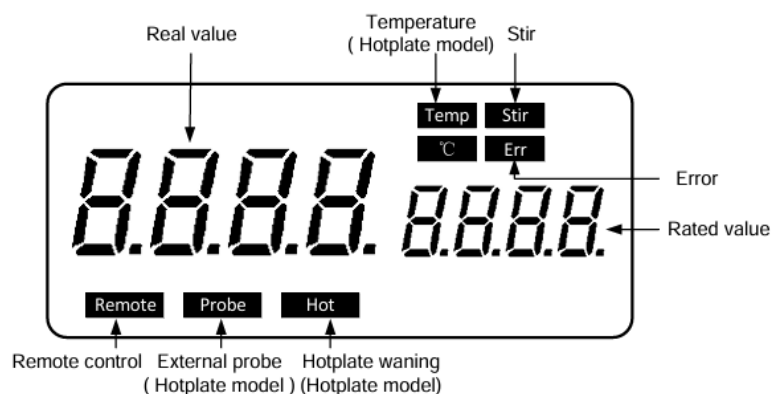


Figure-4

Standard Magnetic Hotplate Stirrer LMHS-C100

Characters	Description
Temp and °C	Display the temperature when the heating The function is switched on.
Stir	Display a stirring state when the stirring The function is switched on.
Hot	Display a hot warning if the heating plate temperature is above 50°C after switching OFF the heating function.
Probe	Display when using an external probe.
Remote	Display in case of a remote control.
Temp and °C	Display the temperature when the heating The function is switched on.
Stir	Display a stirring state when the stirring The function is switched on.
Hot	Display a hot warning if the heating plate temperature is above 50°C after switching OFF the heating function.
Err	Display in case of an error happening.
Rated value/Real value	Display value in case of heating or stirring function switching on.

Note: If both heating and stirring functions are started simultaneously, the heating function always takes priority. If in this case speed is changed via the stirring knob, it displays stirring speed and reverses to temperature in 5 seconds.

7. Installation

7.1 Proper Use

The instrument is designed for mixing and/or heating liquids in schools, laboratories, or factories.

Observe the minimum distances between the devices, between the device and the wall, and above the assembly (min. 100 mm)

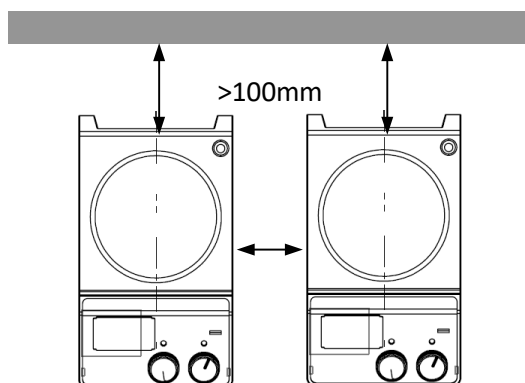


Figure-5

This device is not suitable for use in residential areas

7.2 Inspection

Unpack the equipment carefully and inspect it for any damage that may have occurred during transport.

Note: If there is any apparent damage to the system, kindly do not plug it into the power line.

7.3 Trial Run

- Make sure the required operating voltage and power supply voltage match.
- Ensure the socket is properly grounded.
- Plug in the power cable, ensure the power is on, and begin initializing.
- Add the medium into the vessel with an appropriate stirring bar.
- Place the vessel on the work plate.
- Set the target stirring speed and begin.
- Observe the stirring bar and LCD (digital model).
- Set the target temperature and start heating.
- Observe the real temperature on LCD (digital model).
- Stop the heating and stirring functions.
- If these operations above are normal, the device is ready to operate.

Warning: Forbid to transfer of the vessel when the instrument is working.

8. Operations

8.1 Function: Heating (LCD digital hotplate model)

The device is controlled by digital temperature control technology, which has two separate safe circuits. The hotplate is kept at a constant temperature by a digital control circuit. The hotplate temperature can also be monitored from a separate, adjustable safe circuit. The two temperature sensors (PT1000) internal for temperature control are built into the hotplate. The single external PT1000 can monitor the temperature of the sample.

- Plug in the external PT1000.
- Set the temperature via rotating the temperature control knob slowly to the target value.
- When the heating function is switched on, the LED “Heat” will light up and the LCD will display the real temperature.
- The rated temperature will be displayed on the right-hand side of the LCD as well as **Temp** and **°C** characters.
- The heating function is switched on or off by pushing heating knob.

The instrument is turned on for the setting zone temperature setting when the last shutdown temperature, the common case, set the heating temperature display, the actual temperature may have the following differences:

- 1) Hotplate center and outer edge.
- 2) The sample container and the container.

To ensure the accuracy of the temperature inside the container, kindly use the external temperature sensor PT1000.

8.2 Working with an external temperature sensor

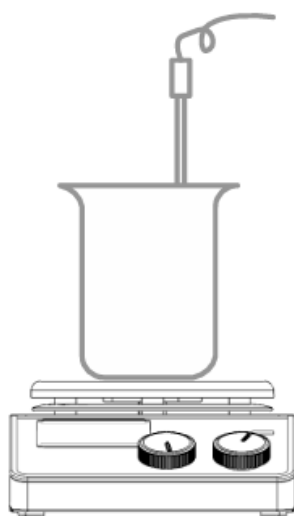


Figure-6

If the sensor is plugged in, “Probe” will be shown on the digital display to indicate the sensor is operating. The setting value of external temperature sensors and the actual temperature are displayed. Safe circuit controls hotplate temperature.

Compared with the temperature control of the hotplate, the external temperature sensor can control the medium’s temperature more precisely.

8.3 Residual heat warning (HOT)

To prevent the risk of burns from a hotplate, the digital hotplate has a residual heat warning function. When the heating function is switched off and the heating plate temperature is still above 50°C, “Hot” will flash to warn that there is a hazard of burns from the hotplate. When the hotplate temperature drops to below 50°C, the unit will automatically switch off. If users want to turn off the LCD immediately, just pull out the plug directly. When the plug is pulled out, the residual heat warning function cannot be run.

8.4 Stirring (LCD Digital mode)

The function “stirring” is switched on or off via rotating stirring knob. The speed is set on the knob (100 to 1500 rpm in steps of 10 rpm). When both function heating and stirring are switched on and those above operations are done, the LCD will shift to the speed value and come back to the temperature value in about 5 seconds.

8.5 Remote Control (LCD digital model)

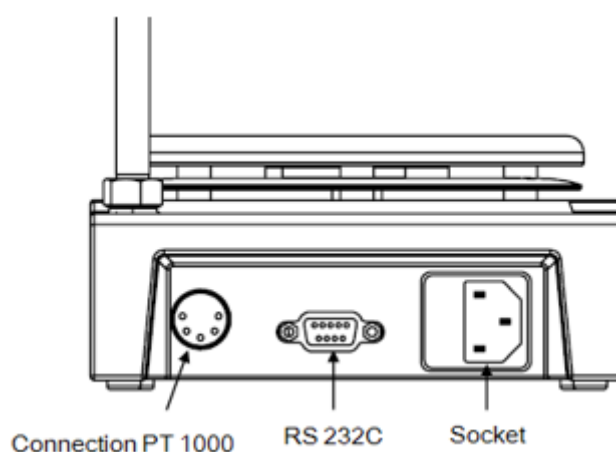


Figure-7

The unit can be controlled from an external PC (using the dedicated software) via the RS232C serial interface fitted to the unit. Data communication from laboratory instruments to the computer is only possible on demand of the computer.

- The functions of the interface lines between laboratory instrument and automation system are selected from the specified signals of the EIA-standard RS232C, corresponding with DIN66020 Part 1. The allotment of the bushing can be taken from **Figure 7**
- **Transmission method:** Asynchronous signal transmission in start-stop operation.
- **Mode of transmission:** Fully Duplex. 1 start bit; 7-character bits; 1 parity bit [straight (even)]; 1 stop bit.
- **Transmission speed:** 9600 bit/s

Note: Forbid to insertion or removal of the RS232C communication line when the switch is on

9. Maintenance

- Proper maintenance can keep instruments working properly and lengthen its lifetime.
- Do not spray cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.
- Only use recommended cleansers.

Dyes	Isopropyl alcohol
Construction materials	Water containing a tenside / Isopropyl alcohol
Cosmetics	Water containing a tenside / Isopropyl alcohol
Foodstuffs	Water containing a tenside
Fuels	Water containing a tenside

- Wear the proper protective gloves during cleaning of the instrument.

Note:

- The electronic device cannot be cleaned with a cleanser.
- The instrument must be cleaned in advance to avoid pollution of hazardous substances, and to be sent back into its original packing.
- If the instrument is not used for a long time, kindly switch it off and place it in a dry, clean, room temperature, and stable location.

10. Troubleshooting

- Instruments can't be powered on
Check whether the power line is unplugged.
Check whether the fuse is broken or loose.
- Fault in power on self-test
Switch OFF the unit, then switch ON and reset the instruments to factory default settings.
- The stir speed cannot reach the set point
Excessive medium viscosity may cause abnormal speed reduction of the motor.
- The unit cannot be powered off when switched off.
Check if the residual heat warning function is still ON and hotplate temperature is above 50°C (the LCD still works and "Hot" flashes).

11. Accessories

Optional Accessories

Model	Accessory
LMHS-C100-P1	Blue carrying plate (To use with color quarter pies)
LMHS-C100-R1	Blue Fixed ring (To use with color quarter pies)
LMHS-C100-Q1	Red quarter pie, 11 holes, 4 mL reaction vessel, ϕ 15.2 mm, 20 mm depth
LMHS-C100-Q2	Purple quarter pie, 4 holes, 20 mL reaction vessel, ϕ 28 mm, 24 mm depth
LMHS-C100-Q3	Blue quarter pie, 4 holes, 30 mL reaction vessel, ϕ 28 mm, 30 mm depth
LMHS-C100-Q4	Black quarter pie, 4 holes, 40 mL reaction vessel, ϕ 28 mm, 43 mm depth
LMHS-C100-Q5	Green quarter pie, 6 holes, 8 mL reaction vessel, ϕ 17.8 mm, 26 mm depth
LMHS-C100-Q6	Golden quarter pie, 4 holes, 16 mL reaction vessel, ϕ 21.6 mm, 31.7 mm depth
LMHS-C100-B1	Reaction block for 50 mL round bottom flask (one flask capacity)
LMHS-C100-B2	Reaction block for 100 mL round bottom flask (one flask capacity)
LMHS-C100-B3	Reaction block for 250 mL round bottom flask (one flask capacity)
LMHS-C100-B4	Reaction block for 500 mL round bottom flask (one flask capacity)
LMHS-C100-PC1	Protective cover, temperature resistance of 135 °C
LMHS-C100-SB1	10 mm $\times$ 6 mm Stirrer Bar
LMHS-C100-SB2	15 mm $\times$ 8 mm Stirrer Bar
LMHS-C100-SB3	20 mm $\times$ 8 mm Stirrer Bar
LMHS-C100-SB4	25 mm $\times$ 8 mm Stirrer Bar
LMHS-C100-SB5	30 mm $\times$ 6 mm Stirrer Bar
LMHS-C100-SB6	40 mm $\times$ 8 mm Stirrer Bar
LMHS-C100-SB7	51 mm $\times$ 8 mm Stirrer Bar
LMHS-C100-SB8	65 mm $\times$ 8 mm Stirrer Bar
LMHS-C100-SB9	80 mm $\times$ 13 mm Stirrer Bar
LMHS-C100-BR1	Stirrer bar remover, Length of 200 mm



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