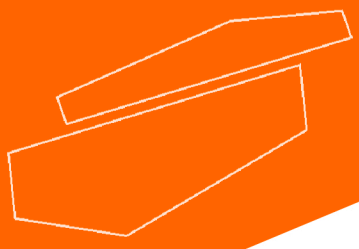



HM01 Heating Mantle
HM02 Heating Mantle with stirrer
HM01-D Heating Mantle with digital screen
HM02-D Heating Mantle with stirrer and digital screen

Please read the User Manual carefully before use, and follow all operating and safety instructions!



user manual

english

User Manual

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Preface

Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

Service

If help is needed, you can always contact your dealer or Labbox via **www.labbox.com** (declare an incidence)

Please, provide the customer service representative with the following information:

- Serial number (on the back side)
- Description of the problem
- Your contact information

Warranty

This instrument is guaranteed to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claim under the warranty, please contact your supplier.

1. Safety Instructions

	Connect the device to an earthed power supply to ensure the safety of the machine and the experiment. Make sure the voltage is the same as required by the device.
	The use of this instrument in inflammable, explosive, poisonous, or highly corrosive experiments is forbidden.
	Place the heating mantle on a horizontal, flat and stable surface.
	The heating mantle must only be used by qualified staff that has read the instructions manual and knows how to operate it.
	Do not place the heating mantle near any heat source.
	While in operation, dangerous materials such as flammable or pathological substances must be out of the device's safety area.
	An overfilling of the vessel could cause some working parts to overheat, which could dissolve flammable materials and cause a fire.
	While the machine is working you must not touch the hot surface, the vessel or the solution to prevent high-temperature burns.
	Read the instructions manual before using this device.

Table 1

- When using the equipment, wear the necessary personal protective equipment to reduce the risk of:
  - Burns caused by splashing and evaporation of liquids
  - Intoxication caused by the release of toxic or flammable gases.

- Set up the instrument on a spacious, stable, clean, non-slip, dry, and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous substances or under water.

- In models with stirring function, gradually increase or reduce the speed if:
  - The magnetic bar comes off due to a too high speed
  - The instrument is not running smoothly

- The set temperature must always be at least 25°C below the flash point of the media used.

- Beware of hazards due to:
  - Flammable materials or media with a low boiling temperature
  - Overfilling of vessels
  - Unsafe vessel

- Process pathogenic materials only in closed vessels.

- Check the instrument and accessories for damage prior to every use. Do not use damaged components. Safe operation is only guaranteed with the accessories described in the “Accessories” chapter. Accessories must be securely attached to the device and must not detach by themselves. Always disconnect the plug before the assembly or disassembly of accessories.
- The instrument can only be disconnected from the main power supply by pulling from the plug, not the cable.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the mains cable does not touch the heating base.
- Do not cover the device.
- Keep away from high magnetic fields.

2. Proper Use

The instrument is designed for heating and/or stirring mixtures of liquids in schools, laboratories or factories. It is not suitable for domestic use or for use in environments that can be hazardous for either the user or the instrument.

3. Inspection

Unpack the equipment carefully and check for any damages that may have arisen during transportation. If necessary, contact your supplier for technical support.

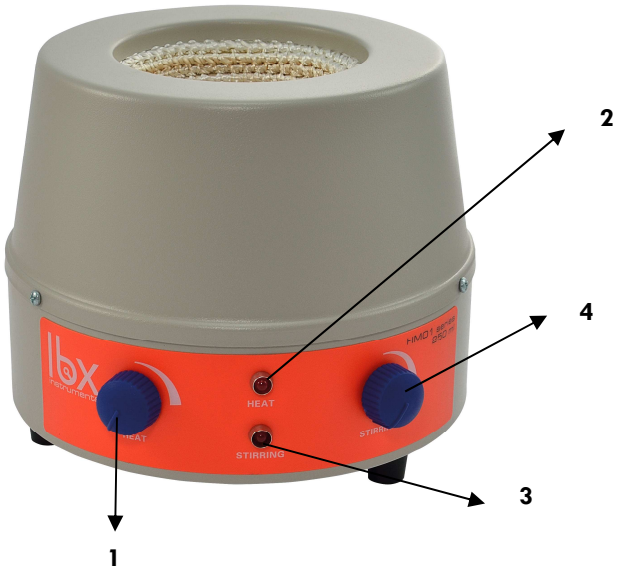
Note:
If there is any apparent damage to the equipment, do not plug it into the power outlet.

The package includes the following items:

Items	Qty
Main unit	1
Power cable	1
Rod support and clamp	1
Magnetic bar (only for HM02 and HM02-D series)	1

4. Description and Control

1. Power: Power intake indicator. When the device is plugged in, the red pilot lights up.
2. Off: Temperature adjustment knob with ON/OFF functions.
3. Heat: Green pilot that shows the temperature's intensity (the brighter the light is, the higher the temperature of the sample).



1. Heat knob: Temperature adjustment knob with on/off functions.
2. Heat pilot: Red pilot which shows temperature's intensity (t the brighter the light is, the higher the temperature the sample has reached is).
3. Stirring pilot: Red pilot that shows stirring intensity (the brighter the light is, the higher the stirring speed is).
4. Stirring knob: Stirring adjustment knob with ON/OFF functions.

1. Digital screen
2. Heat pilot: turns on when the sample is being heated.
3. Control arrows: allow the user to adjust the temperature.
4. **S** button: allows the user to switch between set-up and working mode.

1. Digital screen
2. Heat and stirring pilots
3. Control arrows: allow the user to adjust the temperature.
4. **S** button: allows the user to switch between set-up and working mode.
5. Stirring knob: Stirring adjustment knob with ON/OFF functions.

5. Trial Run

- Make sure the required operating voltage and the power supply voltage match.
- Ensure the socket is properly earthed.
- Ensure the power is OFF.
- Pour the liquid to be heated in a vessel; if a stirring mantle is going to be used place the magnetic stirring rod inside the vessel.
- Place the vessel on the working space.
- Plug in the power cable and ensure the power is ON.
- Set the desired temperature; the equipment will start working.
- Observe the real temperature.
- In the models with stirring (HM02 series), select the stirring speed.
- Check the stirring rod.
- Stop the heating and stirring functions and power OFF the equipment.

If the operations above cause no abnormalities, the device is ready to operate. Otherwise, the device may have been damaged during transportation. In that case, please contact your supplier.

6. Operation

- Place the heating mantle on a horizontal, flat, and stable surface leaving at least 30cm clear on each side. Do not place it near any heat source.
- Plug the equipment into a power source; the red pilot (1) will light up showing that it is connected to the power and will stay lit whenever the equipment is connected to a power source.
- Turn the temperature knob (2) clockwise until you hear a "click"; this shows the heating mantle is ON. To adjust the temperature, keep turning the knob clockwise.
- Green pilot (3) – Working – shows the temperature variation. Thus, the more intense the light is, the higher the temperature of the sample is.
- Placing the thermometer: Assemble the two parts of the rod and insert the rod in its support at the back side of the equipment. Once the rod is placed, place the bosshead at the desired height, hold it with the screw and place the thermometer clamp.

Note:
- The power used must match the device's requirement.
- Make sure the power line is at a safe distance from the heating mantel.
- In case of any fault, cut off the electricity immediately.

- Place the heating mantle on a horizontal, flat, and stable surface leaving at least 30cm clear on each side. Do not place it near any heat source.
- Connect the equipment to a power source.
- Turn the Heat Knob (1) clockwise until you hear a "click"; this shows the heating mantle is ON. The corresponding indicator will light up (2). To adjust the temperature, keep turning the knob clockwise towards the desired temperature.
- Turn the Stirring Knob (4) clockwise until you hear a "click"; this shows the heating mantle is ON. The corresponding indicator light will light up (3). To adjust the stirring speed, keep turning the knob clockwise until you reach the desired speed.

- Placing the thermometer: Assemble the two parts of the rod and insert the rod in its support at the back side of the equipment. Once the rod is placed, put the bosshead at the desired height, hold it with the screw and put the thermometer clamp.

Note:
- The power used must match the device's requirements.
- Adjust the power gradually and slowly.
- Make sure the power line is at a safe distance from the heating mantel.
- In case of any fault, cut off the electricity immediately.

- Place the heating mantle on a horizontal, flat, and stable surface leaving at least 30cm clear on each side. Do not place it near any heat source.
- Connect the equipment to a power source.
- Set up the temperature sensor rods on the rod support. Place the sensor in the sample.
- Press the **S** button to go to set-up mode. Use the arrows to adjust the temperature. The digital screen displays the temperature set by the user.
- Press the **S** button to go back to working mode. The digital screen now displays the actual temperature of the sample.

Note:
- The power used must match the device's requirements.
- Make sure the power line is at a safe distance from the heating mantel.
- In case of any fault, cut off the electricity immediately.

- Place the heating mantle on a horizontal, flat, and stable surface leaving at least 30cm clear on each side. Do not place it near any heat source.
- Connect the equipment to a power source.
- Set up the temperature sensor rods on the rod support. Place the sensor in the sample.
- Press the **S** button to go to set-up mode. Use the arrows to adjust the temperature. The digital screen displays the temperature set by the user.
- Press the **S** button to go back to working mode. The digital screen now displays the actual temperature of the sample.
- Turn the knob clockwise and anticlockwise to adjust the magnetic stirrer power.

Note:
- The power used must match the device's requirements.
- Adjust the power gradually and slowly.
- Make sure the power line is at a safe distance from the heating mantel.
- In case of any fault, cut off the electricity immediately.

7. Faults

In the event that:

- The equipment does not turn ON
  - Make sure the power line is plugged in
  - Check for bad connection of the cable
- The temperature cannot reach the set point or stirring cannot be started by adjusting the control knob
  - Check whether the heating wire broke during transportation
  - Otherwise, the heating resistance of the equipment may be damaged.

If these faults are not resolved, please contact your supplier.

8. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen their lifetime.
- Do not spray cleanser directly on the instrument when cleaning.
- Unplug the power line before cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing surfactants / Isopropyl alcohol
Cosmetics	Water containing surfactants / Isopropyl alcohol
Food products	Water containing surfactants
Fuels	Water containing surfactants

Table 5

- Before using any other cleaning or decontamination methods, verify with the manufacturer that such method will not harm the instrument.
- Wear proper protective gloves when cleaning the instrument.
- In order to avoid contamination from hazardous substances, the instrument must be cleaned and put into the initial packaging before sending it in for repair.
- Use the instrument in a dry, clean room with a stable temperature.

9. Storage and transportation

- Keep the equipment in a dry and clean room with good ventilation and no corrosive gas.
- During transportation, protect it from wetting by the rain and avoid violent collision.

10. MA Specifications

Model	Capacity (ml)	Voltage (V)	Max. Temp.	Power (W)	Working Time	Exterior size (mm)	Packing size (mm)	N.W. (Kg)
HM01	100	220 (50-60Hz)	450°C	100	Continuous	Ø200x160	230x230x170	2
	250			150				
	500			250				
	1000			350		Ø260x200	290x290x220	3.5
	2000			450		Ø300x230	330x330x250	4
HM02	100	220 (50-60Hz)	450°C	100	Continuous	Ø200x160	230x230x170	2.5
	250			150				
	500			250				
	1000			350		Ø260x200	290x290x220	4
	2000			450		Ø300x230	330x330x250	5
HM01-D	100	220 (50-60Hz)	450°C	100	Continuous	Ø220x165	230x215x195	2.5
	250			150				
	500			250				
	1000			350		Ø270x220	280x280x300	5.5
	2000			450		Ø330x230	345x290x350	6.5
HM02-D	100	220 (50-60Hz	450°C	100	Continuous	Ø200x160	230x230x170	2.5
	250			150				
	500			250				
	1000			350		Ø260x200	290x290x220	4
	2000			450		Ø300x230	330x330x250	5

Table 6

11. Working conditions

Ambient temperature: 5~40° C
Relative humidity: ≤90%
Voltage: 220V±10%, 50/60Hz

Nota importante para los aparatos electrónicos vendidos en España

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:

Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden ser eliminados en forma de residuos urbanos.

De conformidad con la Directiva 2012/19/UE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la posibilidad de devolver sus RAEE para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

Remarque importante pour les appareils électroniques vendus en France

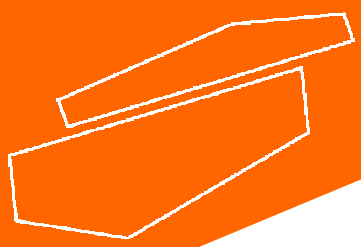
Informations sur la protection du milieu environnemental et élimination des déchets électroniques :

Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.
En réponse à la règlementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de ecosystem dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur www.ecosystem.eco).
L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

Nota importante per le apparecchiature elettroniche vendute in Italia

Istruzioni sulla protezione ambientale e sullo smaltimento dei dispositivi elettronici:

Le apparecchiature elettriche ed elettroniche contrassegnate con questo simbolo non possono essere smaltite come rifiuti urbani.
In conformità con la Direttiva 2012/19 / UE, gli utenti dell'Unione Europea di apparecchiature elettriche ed elettroniche hanno la possibilità di restituire i propri RAEE per lo smaltimento al distributore o al produttore di apparecchiature dopo averne acquistato uno nuovo. La rimozione illegale di apparecchiature elettriche ed elettroniche è punibile con una sanzione amministrativa.



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