



## H30SQC Digital Magnetic Stirrer with Heating

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



# user manual

english

# User Manual



## H30SQC Digital Magnetic Stirrer with Heating

### **Preface**

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

### **Service**

In order to guarantee this equipment works safely and efficiently, it must receive regular maintenance. In case of any faults, do not try to repair it yourself. If help is needed, you can always contact your dealer or Labbox via [www.labbox.com](http://www.labbox.com)

Please provide the customer care representative with the following information:




- Serial number
- Description of problem
- Your contact information

### **Warranty**

This instrument is warranted 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

	<p><b>Warning!</b></p> <ul style="list-style-type: none"><li>● Read the operating instructions carefully before use.</li><li>● Ensure that only trained staff works with the instrument.</li></ul>
	<p><b>Risk of burn!</b></p> <ul style="list-style-type: none"><li>● Caution when touching the housing parts and the hotplate, which can reach a temperature of 500 °C.</li><li>● Pay attention to the residual heat after switching off.</li></ul>
	<p><b>Protective ground contact</b></p> <ul style="list-style-type: none"><li>● Make sure that the socket is grounded (has a protective ground contact) before use.</li></ul>

- When working, wear personal safety guards to avoid the risk from:
  - Evaporation of liquids
  - Release of toxic or combustible gases
- Set up the instrument on a stable, clean, non-slip, dry, and fireproof surface. Do not operate the instrument in an explosive atmosphere, with hazardous substances, or underwater.

Gradually increase the speed, but reduce it if:

- The stirring bar breaks away due to high speed.
- The instrument is not running smoothly, or the container moves on the base plate.

- Temperature must always be set to at least 50 °C lower than the fire point of the media used.
- Be aware of hazards due to:
  - Flammable materials or media with a low boiling temperature
  - Overfilling of media
  - Unsafe container
- Process pathogenic materials only in closed vessels.
- Check the instrument and accessories prior to each use. Do not use damaged components. Accessories must be securely attached to the device and cannot come off by themselves. Always disconnect the plug before fitting accessories.
- When using an external temperature sensor, ensure that the tip of the measuring sensor is at least 5-10mm away from the vessel bottom and wall.
- The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
- Ensure that the voltage stated on the label matches the main power supply.
- Make sure that the main power supply cable does not touch the hotplate, and do not cover the device during use.

- Do not apply pressure or overheat the media on the surface of the glass ceramic as this may cause it to break.
- The instrument must only be opened by experts.
- Keep the instrument away from high magnetic fields.

## 2. Proper Use

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

- Ensure that there is a minimum distance of 100 mm between the devices, between the device and the wall, and above the assembly (min. 100 mm).

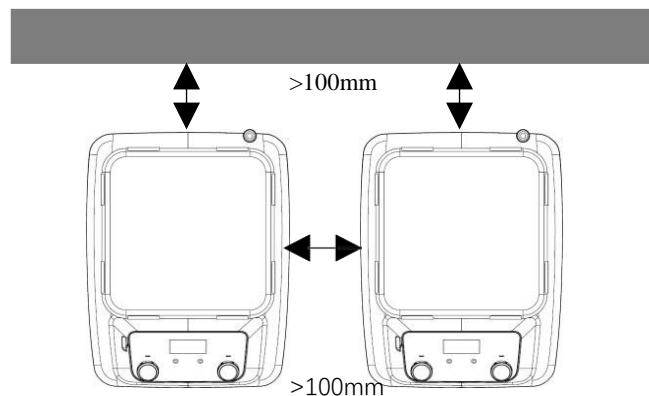


Figure 1

This device is not suitable for use in residential areas or other constraints mentioned in Chapter 1.

## 3. Inspection

### 3.1. Receiving Inspection

Carefully unpack the equipment and check for any damages that may have occurred during transport. If you need technical support, please contact the supplier.

	<p><b>Note:</b> If there is any visible damage to the system, please do not plug it into the power line.</p>
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### 3.2. List of Items Included

The package includes the following items:

Items	Qty
Main unit	1
User manual	1

Table 1

## 4. Control

### 4.1. Receiving Inspection

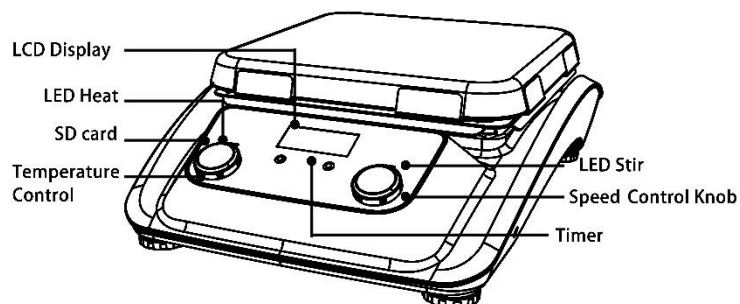


Figure 2

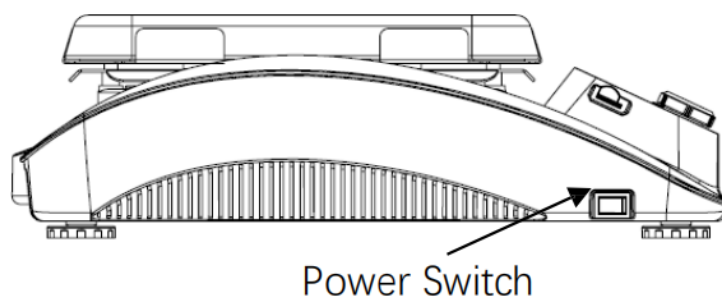


Figure 3

Items	Descriptions
Temperature control knob	Controls the heating function.
Speed Control Knob	Sets the rated rotary speed. Turns the stirring function ON or OFF.
LED Heat	Lights up when the heating function is turned ON.
LED Stir	Lights up when the stirring function is turned ON.
Timer	Press the knob, and then press “-” or “+” to set the heating time value.
LCD Display	Displays the temperature setting value (on the right side) and the real value (on the left side) when the heating knob is rotated.
SD card	Used to save the data of the test.
Power Switch	Turns the instrument ON or OFF.

Table 2

## 4.2. Display

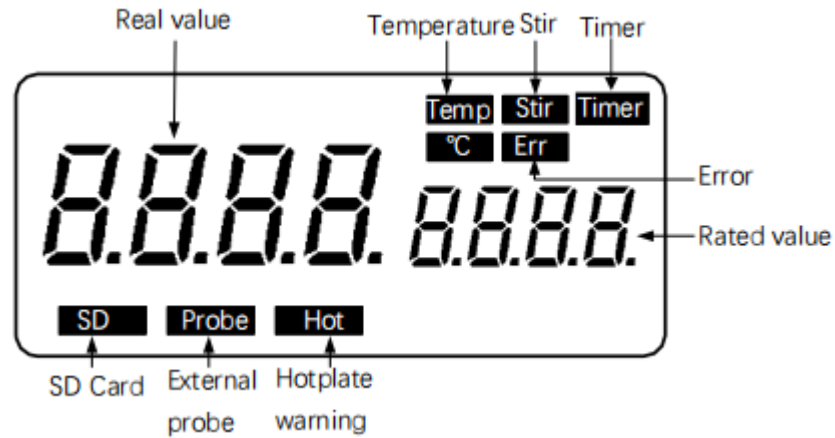


Figure 4 LCD digital model

Temp and °C	Display the temperature when the heating function is switched ON.
Stir	Display the stirring state when the stirring function is switched ON.
Timer	Display the timer parameter when the timer function is switched ON.
Err	Display an error message if an error occurs.
Hot	Display a warning if the heating plate temperature is above 50 °C after switching OFF the heating function.
Probe	Display when an external probe is being used.
SD	Display when an SD card is being used.
Set value / Real value	Display values when the heating or timer functions are switched ON.




### Note:

If both heating and stirring functions have been started simultaneously, the heat display always takes higher priority. If in this case, the speed is changed using the stirring knob, it displays stirring speed and reverts to temperature after 5 seconds. The timer can only control the heating time, and the button will not work for the stirring function as it has already been started.

## 5. Trial Run

- Make sure the required operating voltage and power supply voltage match.
- Ensure that the socket is properly grounded.
- Plug in the power cable and ensure that the power is on to begin initializing.
- Place the vessel on the work plate.
- Set the target heating time.
- Set the target temperature and start heating.
- Stop the heating functions.

If these operations above are normal, the device is ready to operate. If these operations are not normal, the device may be damaged during transportation, please contact your local dealer /supplier.

	<p><b>Warning!</b> Forbid to transfer the vessel when the instrument working.</p>
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## 6. Working with External Temperature Sensor

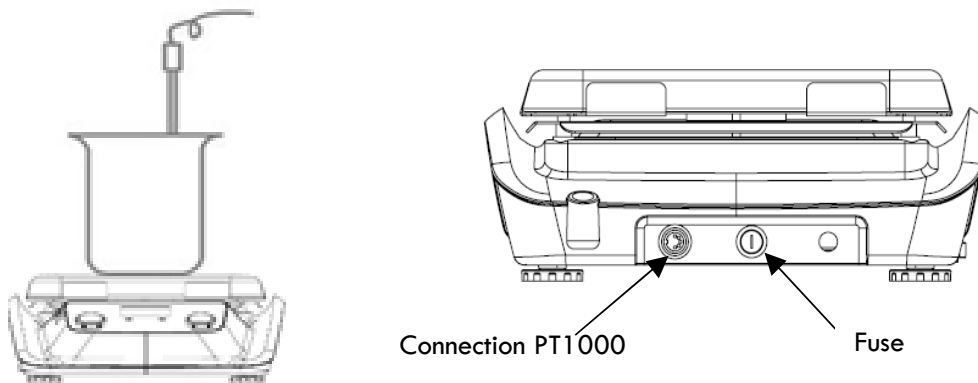


Figure 6

The external temperature sensor PT1000 is a manufacturer's standard accessory. If the sensor is plugged in, "Probe" will be shown on the LCD digital display to indicate that the sensor is operating. The setting value of the external temperature sensor and the actual temperature are displayed. The safe circuit controls the hotplate temperature. Compared to the temperature control of the hotplate, the external temperature sensor can control the medium's temperature more precisely. The heating function will be stopped automatically under abnormal conditions. Please follow the instructions below to operate:

- Switch OFF the instrument.
- Ensure the external temperature sensor is inserted into the media being heated.
- Switch ON the instrument and run the heating function.

If you experience any issues with the heating function, please contact you dealer or supplier for assistance.

## 7. Residual Heat Warning (HOT)

To prevent the risk of burns from the hotplate, the unit is equipped with 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 of the hazard of burns from the hotplate. When the hotplate temperature drops below 50°C, the unit will automatically switch off. If users want to turn off the LCD screen immediately, they can simply pull out the plug. Note that the residual heat warning function cannot be activated when the unit is powered off.

## 8. Logging Function

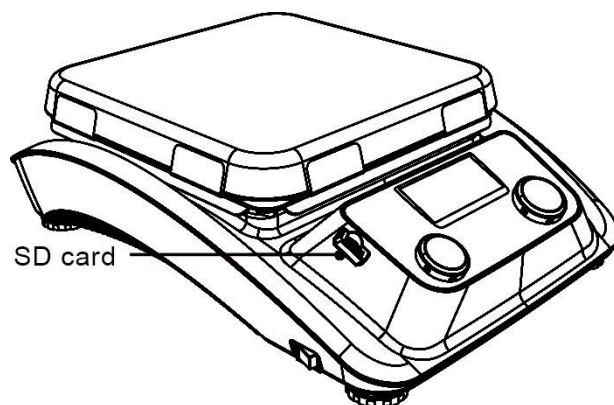


Figure 7

The data can be saved using an SD card. The process is as follows:

With the power switch turned off, insert the SD card into the slot on the left side of the panel.

After inserting it, turn on the power switch and operate the heating as described above, setting the temperature at 1-minute intervals.

The current temperature will be automatically logged.

The logged data can be checked in Excel format by connecting the SD card to a personal computer."



**Note:**

The logging function starts automatically when you press the temperature control knob and stops when you press it again. Be sure to turn off the power switch before removing the SD card to avoid malfunctions.



## 9. Faults

- The instrument cannot 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 the factory default setting.
- Unit cannot be powered OFF when switched OFF:
  - Check if the residual heat warning function is still ON and the hotplate temperature is above 50°C (the LCD screen still works and "Hot" flashes).

*If these faults are not resolved, please contact dealer/supplier.*

## 10. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen their 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 tenside / Isopropyl alcohol
Cosmetics	Water-containing tenside / Isopropyl alcohol
Foodstuffs	Water-containing tenside
Fuels	Water-containing tenside

- Wear proper protective gloves during cleaning of the instrument.
- Before using any other method for cleaning or decontamination, the user must ascertain with the manufacturer that this method will not harm the instrument.
- When sending the instrument in for service, send it back in the packaging carton. Storage packing is not sufficient for the return shipment. Additionally, use a suitable transportation packing.
- The enamel makes the hotplate easier to care for and more resistant to acids and bases. However, due to the enamel coating, the hotplate is more susceptible to extreme fluctuations in temperature and the force of impact. This can result in cracks forming or the coating flaking off.

## 11. Associated Standards and Regulations

Construction in accordance with the following safety standards:

EN 61010-1

UL 3101-1

CAN/CSA C22.2(1010-1)

EN 61010-2-10

Construction in accordance with the following EMC standards:

EN 61326-1

Associated EU guidelines: EMC-

guidelines: 89/336/EWG Instrument

guidelines: 73/023/EWG

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## 12. Specifications

Items	Specifications
	LCD digital model
Voltage [VAC], Frequency [Hz]	110V,60Hz / 220V,50Hz
Power [W]	*1400
Stirring point position quantity	1
Max. stirring quantity (H <sub>2</sub> O) [L]	30
Max. magnetic bar [L×Ø, mm]	80×10
Motor type	DC brushless motor
Speed range [rpm]	100-1500
Rotary speed display	LCD
Plate material	Glass ceramic
Dimensions of the work plate (mm)	254x254
*Temperature range [°C]	RT-500, increment: 1
*Temperature display [°C]	LCD
*Temperature display accuracy [°C]	±0.1
*Control accuracy of heating temperature [°C]	±1°C (<100°C), ±1% (>100°C)
*The safety temperature of the hotplate [°C]	540
*Temperature sensor in medium	PT1000
*Control accuracy of heating temperature with temperature sensor [°C]	±0.2
*Residual heat warning	50°C
Dimensions (mm)	328x424x138
Permitted ambient temperature [°C]	5-40
Permitted relative humidity	80%
Protection class acc. to DIN 60529	IP21
SD card	Yes

### **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 réglementation, 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](http://www.ecosystem.eco)).

L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

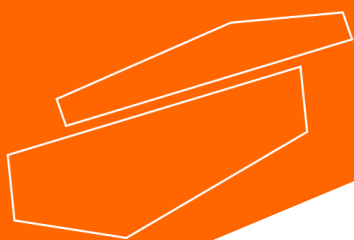
### **Nota importante per le apparecchiature elettroniche vendute in Italia**

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.



[www.labbox.com](http://www.labbox.com)