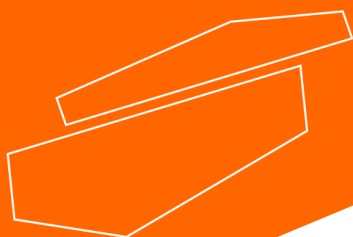




H10X04 Multi-position magnetic stirrer with heating, 4 positions

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



user manual

english

User Manual



H10X04 Multi-position magnetic stirrer with heating, 4 positions

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.

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.

Disclaimer

- The intellectual property rights of this manual belong to the company.
- We elaborately prepared this manual with the attitude of being responsible for the users. But we can't guarantee that the contents of the manual are fully correct. If any occasional or subsequent loss is caused by this manual, the company will not be liable for this at all.
- The manual is a pure technical document, free of any implication or oblique hint of any third party. Moreover, we won't be liable for any printing error(s).
- The company and any of the company's employees will not bear any liability for direct/indirect loss of information or stop of business (if any) caused by the information of the manual or the product it mentions.
- The company reserves the right to change specifications and price of the product.
- Technical specifications and outline are subject to change without prior notice.

1. Safety Notes

Symbol	Additional Description
	Warning! <ul style="list-style-type: none">• Please check the instrument working condition before use.• Ensure that every user is aware of the instrument operation.• Operate the instrument according to the instructions provided in this user manual.
	Caution! <ul style="list-style-type: none">• Do not touch the work plate or housing parts during operation as the work plate temperature can reach up to 380 °C during operation.• Keep the instrument away from explosive and flammable materials.
	Protective ground contact! <ul style="list-style-type: none">• Make sure that socket is earthed before use (protective from ground contact).

- Ensure that the label indicates the correct voltage before connecting the instrument to power supply.
- Set up the hotplate magnetic stirrer in a spacious area on an even, stable, clean, non-slip, dry and fireproof surface.
- Ensure a good working environment free of explosive, hazardous and inflammable substances, or water.
- Before every use, ensure that the device, accessories and are free of damage and fixed properly.
- For the purpose of safety, please use the standard accessories listed in the chapter “Accessories” in accordance with the manual. Accessories must be firmly connected to the product in a way that avoids separation.
- Wear personal safety guards to avoid the risk of splashing and evaporation of liquids, release of toxic or combustible gases during operation.
 - Heated liquid splashes, vaporizes or releases toxic or flammable gas.
 - The heated substances may start to react as they achieve a certain temperature.
- Keep the magnetic stirrer away from the effects of high magnetic field.
- The heating temperature must be set to at least 50 °C lower than the fire point of the chemicals used.
- For stirring a pathogenic sample, a closed vessel must be used.
- The external temperature sensor should be placed at least 5-10 mm away from all the sides.
- Please prevent water from splashing on the electrical elements of the product.
- Ensure that the mains power is disconnected before assembly, disassembly, cleaning, or maintenance.

2. Product Overview

2.1 Scope of Application

The instrument is designed for mixing and heating applications.

- The altitude should not exceed 2000 meters.
- Environmental temperature between 5°C to 40 °C.
- Installation type: the product is to connect the indoor outlet.
- Voltage fluctuation should not be more than $\pm 10\%$
- The distance from other instruments and the wall should be more than 100 mm.

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

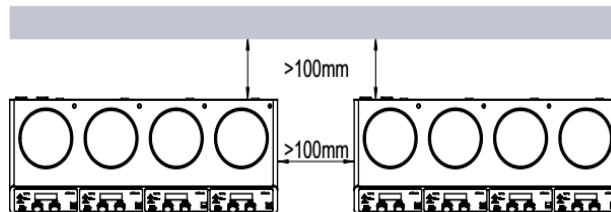


Fig. 2.1

2.2 Technical Parameters

Technical Parameters	
Size of tray	Φ 135 mm x 4
Material of tray	Stainless steel ceramic coating
Type of motor	Brushless DC motor
Input power of motor [W]	1.8 W x 4
Total power [W]	515 W x 4
Heating power [W]	500 W x 4
Input power	100 - 120 V, 60 Hz; 200 - 240 V, 50 Hz
Stirring position	4
Max. stirring capacity (H ₂ O) [L]	10 L x 4
Single-head max. stirring capacity (H ₂ O) [L]	10 L
Max. stirring bar [mm]	40
Speed range [rpm]	200 - 1500
Speed display	LCD
Temperature display	LCD
Speed control accuracy [rpm]	± 20
Temperature control range [°C]	25 – 340 °C
Over temperature protection temperature [°C]	420
Temperature display error [°C]	± 0.1
External sensor	PT1000
IP protection	IP20
External dimension [W x D x H, mm]	698 x 270 x 128
Weight [kg]	9.5 kg
Allowable ambient temperature [°C]	5 – 40
Allowable RH	80 % RH

2.3 Components

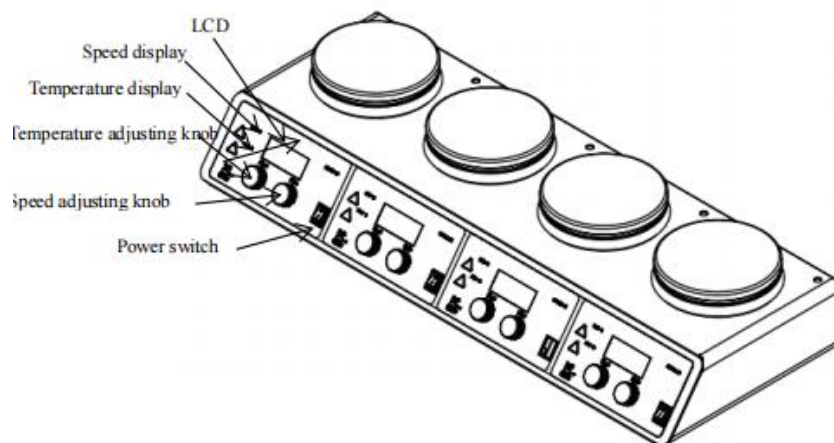


Figure 2.3.1 Magnetic Hotplate Stirrer

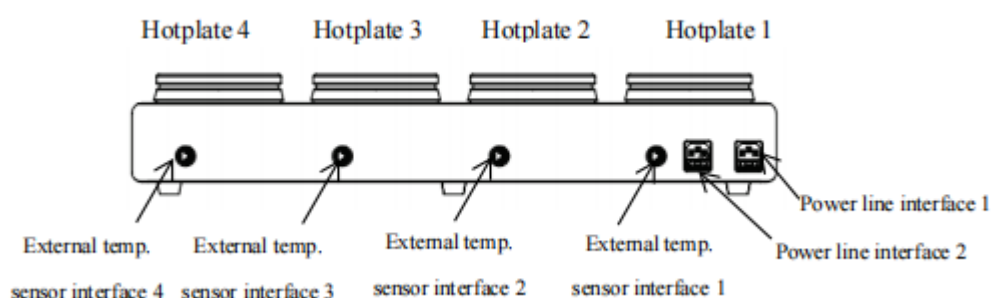


Fig. 2.3.2

2.4 Control Display

2.4.1. Control

	Name	Description
Heating / stirring	Temperature adjusting knob Heat	Set the control temperature within the range of 25- 340 °C, press the knob to enable and disable the heating function
	Speed adjusting knob Stir	Set the speed within the range of 200-1500 rpm, press the knob to enable and disable the stirring function
	LCD display	LCD screen displays current working state of the product and its settings
	External temperature probe indicator	The character " Probe " is displayed when an external temperature probe PT1000 is inserted
	Power switch	To switch power ON/OFF
Power line	Power line interface 1	Power input of Hotplate 1 and Hotplate 2
	Power line interface 2	Power input of Hotplate 3 and Hotplate 4

2.4.2. Display

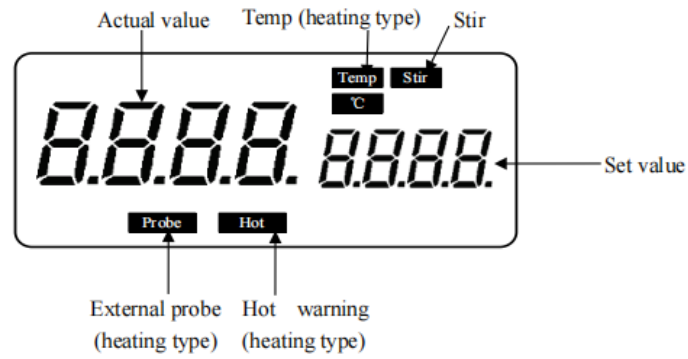


Fig. 2.4.2

Display	Descriptions
Stir	It is displayed when stirring function is enabled.
Temp. & °C	It is displayed when heating function is disabled.
Hot	It is displayed when the temperature of a hotplate is higher than 50°C no matter whether heating function is enabled or no.
Probe	It is displayed when an external probe is inserted.
Set/actual value	The numerical value is displayed when heating function and stirring functions are enabled.

3. Operation Instructions

3.1 Open-package Inspection

Unpack the instrument carefully and check for any damage which may have arisen during transport. Open-package inspection aims to confirm the completeness of associated parts. The packing list is given below:

Table 3.1

Name	Quantity
Main unit	1
Power line	2



Caution:

If there is any apparent damage to the system, please do not plug it into the main power line.

3.2 Operation

- Ensure that the label indicates the correct voltage before connecting the instrument to the power supply.
- Do not operate the unit with a damaged power cord.
- Connect the power cord to the unit in the socket provided.
- Switch power ON and the instrument will start to self-check.
- Mount a vessel with stirring liquid and stirring bar on to the work plate.
- Temperature and stirring can be set using two control knobs below the display panel.
- Set the target temperature and stirring speed and start heating and stirring.
- Put the external sensor probe into the vessel on the hotplate.
- Ensure that the tip of the sensor is at least 5-10 mm away from the bottom of the vessel.
- The LCD displays the actual temperature and set temperature.
- Disable the heating function and stirring function to switch OFF the operation.

If the above operations are normal, the instrument is ready to operate. If there is any problem during the above operations, then instrument may be damaged during transportation, please contact the manufacturer or supplier for technical support.



Caution:

Don't remove the container in the running process of the product. Once the container is separated from the working tray surface of the product, stirring function should be stopped before the container is placed again; stirring function can be enabled again after the container is placed properly.

4. Functions

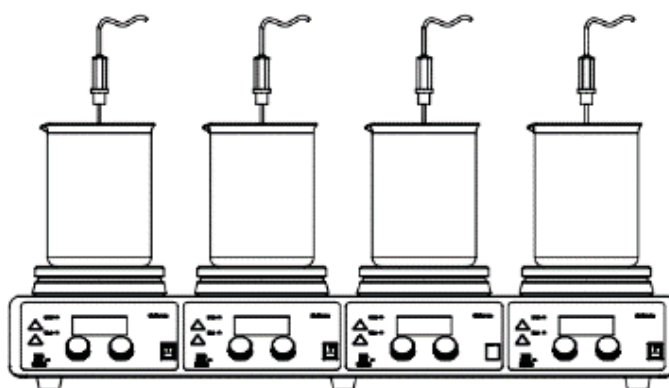
4.1 Heating Function

The system has two independent safety circuits to control the temperature of hotplates. Safety detection circuits can monitor the temperature of hotplates.

- Switch power ON to see the normal screen display with last run parameters.
- When the heating function is enabled, the actual temperature is displayed on the left side and set temperature on the right side of LCD screen.
- Press the temperature adjusting knob to enable/disable the heating function.

4.2 External Sensor Installation

- Connect the external sensor to the port provided at the back of the unit.
- Put the external sensor probe into the vessel on the hotplate.
- The external temperature sensor PT1000 used for this product is a standard optional accessory of the manufacturer.




- When an external temperature sensor is connected, the character “Probe” is always displayed, which shows that the external temperature sensor starts working.
- Heating function will automatically shut down when an abnormal circumstance is detected.

4.3 Stirring Function

- The product uses the closed loop circuit to control the motor and the motor drives the permanent magnet to rotate. Set the target speed by rotating the speed control knob slowly to desired setting.
- The set value is confirmed and stirring is switched “ON” by pushing the stirring control knob.
- The LCD displays the target speed value on the right-hand side during stirring.
- The stirring function is switched “OFF” by pushing the same stirring control knob again.

5. Cleaning and Maintenance

- Proper maintenance can keep instruments working properly and lengthen their lifetime.
- Please keep the instrument in dry and clean surface.
- Please do not connect the power supply before the surface dries.
- If the instrument is wet, then any solid or liquid particles might have got into the instrument, please disconnect the power supply quickly and contact the manufacturer/supplier for more advice.
- Do not spray cleanser into the instrument when cleaning.
- Unplug the power line before cleaning. Please use the recommended cleansers.

	<p>Warning! Before any maintenance or inspection, the power cable must be pulled out of the socket.</p>
---	--

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

- You can consult the manufacturer about the materials that are not listed in the above table. Before using other cleaning methods, the user must confirm with the manufacturer that the method will not damage the product. When cleaning the product, please wear suitable protective gloves.
- If the product is not in use for a long time, please store it in a dry, clean, stable and room temperature environment.

Faults Diagnosis

- The instrument adopts advanced production technology and testing methods. Each unit had been tested thoroughly before dispatch, with good reliability.
- The common errors generally occur due to improper operation.
- **If the error occurred cannot be handled, please contact the local dealers, or can contact us directly.**

Problem	Probable Cause	Solutions
No display found and no operation	Power line connection is insecure	Check power line connection and reconnect it securely.
	Power fuse damage or loose	Check whether the power fuse is damaged or loose.
ERR5	The temperature exceeds the protection temperature	The sensor failure or heating element short circuit.
ERR6	Temperature rises even after the heating is switched OFF	The thyristor short circuit or failure.
ERR7	Temperature do not rise even after heating is switched ON	Heating circuit is broken or the sensor failure.
ERR8	Motor speed detection error	The motor fails to run, or the speed acquisition sensor fails to function.

Product Certification

We certify that the construction of this product conforms in accordance to industry standards and ISO 9001 standards, and other international standards organizations.

Structure in accordance with the following safety standards:

- EN 61010-1
- UL 61010-1
- CAN/CSA C22.2 No. 61010-1
- EN 61010-2-010

Construction in accordance with the following EMC standards:

- EN 61326-1

Associated EU guidelines:

- EMC standard: 2014/30/EU
- LVD standard: 2014/35/EU

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).

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

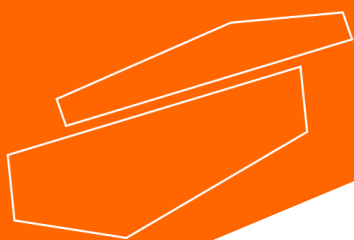
Nota importante per le apparecchiature elettroniche vendute in Italia

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