

(Hotplate) Magnetic Stirrer

User Manual

LED Digital Hotplate Magnetic Stirrer

LED Digital Magnetic Stirrer

Classic Magnetic Stirrer



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

Technical specifications and outline are subject to change without prior notice.

Contents

Preface.....	1
Service.....	1
Warranty	1
1. Safety Instructions.....	1
2. Proper Use	3
3. Inspection	3
3.1 Receiving Inspection.....	3
3.2 Listing of Items	3
4. Control.....	4
4.1 Control elements	4
4.2 Display	7
5. Trial Run.....	8
6. Function: Heating (Digital hotplate model).....	8
6.1 Working with external temperature sensor	9
6.2 Residual heat warning (HOT)	9
7. Stirring.....	10
8. Faults	10
9. Maintenance and Cleaning	11
10. Associated Standards and Regulations	11
11. Specifications	12

Preface

Welcome to the “*BlueSpin* (Hotplate) Magnetic Stirrer”. Users should read this Manual carefully, follow the instructions and procedures, and be aware of all the cautions when using this instrument.

Service

When help needed, you can always contact the Service Department of manufacturer for technical support in the following ways:

Please provide the customer care representative with the following information:

- Serial number (on the rear panel)

1. Safety Instructions


	<p>Warning!</p> <ul style="list-style-type: none">• Read the operating instructions carefully before use.		<ul style="list-style-type: none">• Ensure that only trained staff works with the instrument. <p>Risk of burn!</p> <ul style="list-style-type: none">• Caution when touch the housing parts and the hotplate which can reach temperature of
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- Certification
- Description of problem (i.e., hardware or software)
- Methods and procedures adopted to resolve the problems
- 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 claims under the warranty please contact your local supplier. You may also send the instrument directly to manufacturer, enclosing the invoice copy and by giving reasons for the claim.

	<p>280°C.</p> <ul style="list-style-type: none"> • Pay attention to the residual heat after switching off.
	<p>Protective ground contact!</p> <ul style="list-style-type: none"> • Make sure that socket must be grounded (protective ground contact) before use.

• When working wear personal safety guards to avoid the risk from:

- Splashing and evaporation of liquids
- Release of toxic or combustible gases
- Set up the instrument in a spacious area on a stable, clean, non-slip, dry and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous substances or under water.
- Gradually increase the speed, reduce the speed if:
 - Stirring bar breaks away due to high speed
 - The instrument is not running smoothly, or container moves on the base plate
- Temperature must always be set 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. Safe operation is only guaranteed with the accessories described in the “Accessories” chapter. Accessories must be securely attached to the device and can not come off by themselves. Always disconnect the plug before fitting accessories.
- When the external temperature sensor needed, the tip of the measuring sensor must be at least 5-10mm from vessel bottom and wall.
- The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
- The voltage stated on the label must correspond to the main power supply.
- Ensure that the main power supply cable does not touch the hotplate. Do not cover the device.
- The instrument may only be opened by experts.
- Keep away from high magnetic field.

2. 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)

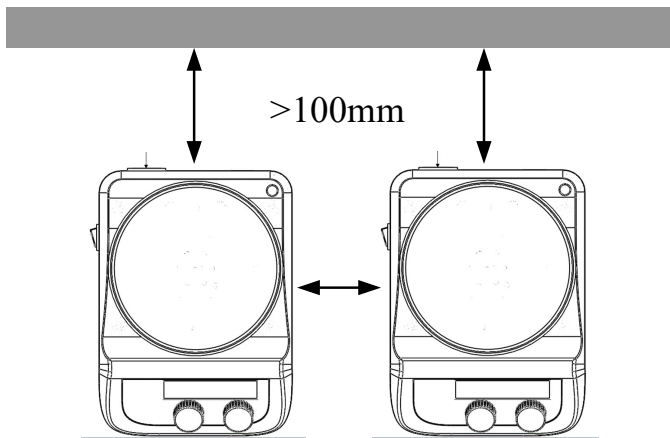


Figure 1

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

3. Inspection

3.1 Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. Please contact manufacturer/supplier for technical support.



Note:

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

3.2 Listing of Items

The package includes the following items:

Items	Qty
Main unit	1
Power cable	1
User Manual	1

Table 1

4. Control

4.1 Control elements

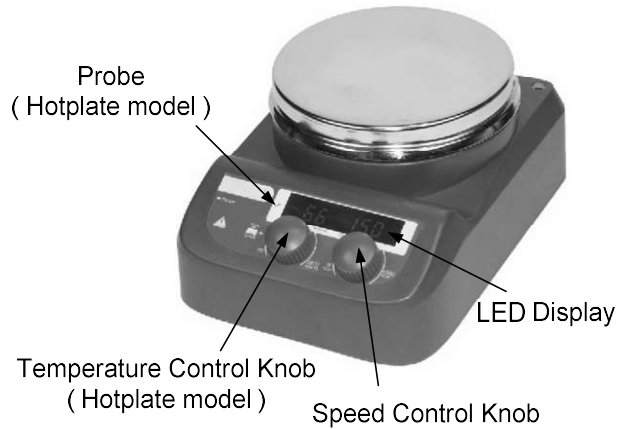


Figure 2 LED Digital Hotplate Magnetic Stirrer

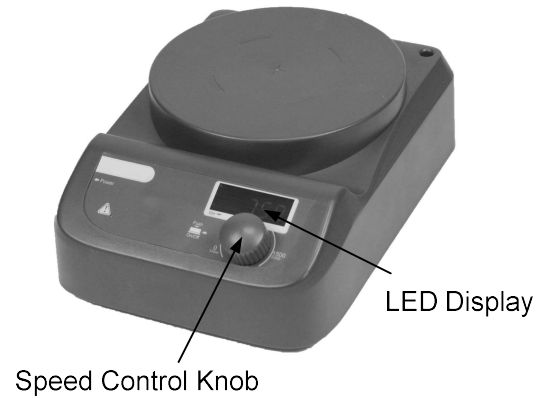


Figure 3 LED Digital Magnetic Stirrer



Figure 4 Classic Magnetic Stirrer

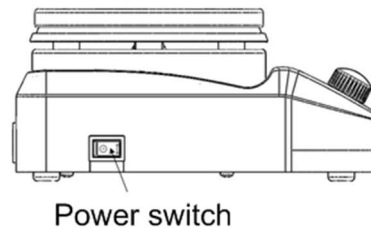


Figure 5






	Items	Descriptions
Digital hotplate model	Temperature Control Knob 	Set the temperature parameters. The function “heating” is switched ON or OFF via push ON/OFF knob.
	Speed Control Knob 	Set the rotary speed. The function “Stirring” is switched ON or OFF via push ON/OFF knob.
	LED Display	LED displays the real working state and all settings.
	Probe	When the external temperature sensor PT1000 is plugged in, probe icon  is lit.
	Power Switch	Switch ON or OFF the instrument.
Digital model	Temperature Control Knob 	Set the rotary speed. The function “Stirring” is switched ON or OFF via push ON/OFF knob.
	LED Display	LED displays the real working state and all settings.
	Power Switch	Switch ON or OFF the instrument.
Classic model	Speed Control Knob 	The stirring function is switched ON by rotating the knob.
	Power Switch	Switch ON or OFF the instrument.

Table 2

4.2 Display

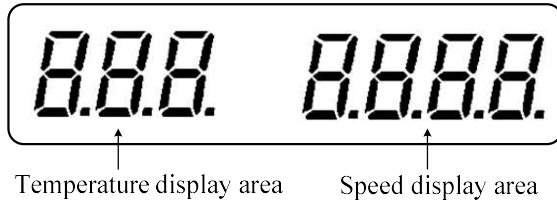


Figure 6 Digital hotplate model

Characters	Descriptions
Temperature display area	When heating function was switched ON, LED displays the temperature setting value and shifts to real value in 5 seconds. When the heating function is switched OFF and the hotplate temperature is still above 50°C, LED displays “Hot”, otherwise LED displays OFF.
Speed display area	When stirring function was switched ON, LED displays the speed setting value and flashes. The setting value does not flash until real speed reaches the set point.

Table 3

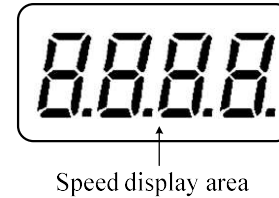


Figure 7 Digital model

Characters	Descriptions
Speed display area	When stirring function was switched ON, LED displays the speed setting value and flashes. The setting value does not flash until real speed reaches the set point.

Table 4

5. Trial Run

- Make sure the required operating voltage and power supply voltage match.
- Ensure the socket must be 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 vessel on the work plate.
- Set the target stirring speed and begin.
- Observe the stirring bar and LED display (digital model).
- Set the target temperature and start heating.
- Observe the LED display (digital hotplate model).
- Stop the heating and stirring functions.

If these operations above are normal, the device is ready to operate. If not, the device may be damaged during transportation, please contact manufacturer/supplier for technical support.



Warning !

Forbid to transfer the vessel when the instrument working.

6. Function: Heating (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 internal for temperature control are built into the hotplate. The single external PT1000 can monitor the temperature of 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 displays the temperature value on the left-hand side.
- The heating function is switched on or off by pushing heating knob.

The instrument automatically displays the last running speed and temperature parameters once turned on.

Generally, the LED screen cannot display the actual

temperature of sample in the vessel or hotplate surface, temperature differences as following:

- Hotplate center and outer edge.
- The sample in the vessel and hotplate surface.

In order to ensure the accuracy of the temperature inside the container, please use the external temperature sensor PT1000.

6.1 Working with external temperature sensor

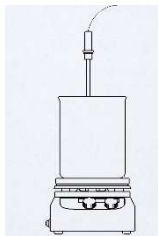


Figure 6

The external temperature sensor PT1000 is the manufacturer's standard accessory. When PT1000 sensor is connected and rotate the temperature control knob, LED displays the temperature setting value and shifts to real value in 5 seconds. Safe circuit controls hotplate temperature under 320°C. Comparing with the temperature control of the hotplate, the external temperature sensor can control the

medium's temperature more precise. The heating function will be stopped automatically under abnormal conditions.

Please operate follow the instructions below:

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

If the heating function does not work, please contact manufacturer/supplier for technical support.

6.2 Residual heat warning (HOT)

In order to prevent the risk of burns from a hotplate, 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 unit is powered off, the LED screen displays the temperature of hotplate and Hot in turn. When the hotplate temperature drops to below 50°C, the unit will automatically switch off. If users want to turn off the LED immediately, just pull out the plug directly. When the plug is pulled out, the residual heat warning function cannot be run.

7. Stirring

The function “stirring” of LED digital model is switched on or off via pushing on/off speed control knob. The speed range of 200 to 1500 rpm and in steps of 10 rpm.

The function “stirring” of classic model is switched on or off via rotating speed control knob. The speed range of 0 to 1500 rpm.

8. Faults

- Instruments can't be power 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 setting.
- Stir speed cannot reach set point
 - Excessive medium viscosity may cause abnormal speed reduction of the motor
- 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

If these (the LED screen still works and “Heat” flash) contact manufacturer/supplier.

9. Maintenance and Cleaning

- 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 tenside / Isopropyl alcohol
Cosmetics	Water containing tenside / Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

- Before using other method for cleaning or decontamination, the user must ascertain with the manufacturer that this method will not harm the instrument. Wear the proper protective gloves during cleaning of the instrument.



Note:

- Electronic device can not clean with cleanser.
- If you require maintenance service, must be

cleaned the instrument in advance to avoid pollution of hazardous substances, and to send back into original packing.

- If the instrument will not use for a long time, please switch off and place in a dry, clean, room temperature and stable location.

10. 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.

11. Specifications

Items	Specifications	
	LED Digital (Hotplate) model	Classic model
Voltage [VAC]	*100~120/200~240 100~240	
Frequency [Hz]	50/60	50/60
Power [W]	*515/15	10
Stirring point position quantity	1	1
Max. stirring quantity (H ₂ O) [l]	3	3
Max. magnetic bar [L×Ø, mm]	50	50
Motor type	Brushless DC motor	
Max. power input of motor [W]	5	5
Max. power output of motor [W]	3	3
Speed range [rpm]	200 – 1500, increment:10	0 – 1500

Items	Specifications	
	LED Digital (Hotplage) model	Classic model
Rotary speed display	LED	Scale
Plate material	*Ceramic coated/Plastic	
Dimensions of workplate (mm)	φ135	φ135
*Heating power [W]	500	-
*Temperature range [°C]	RT-280, increment:1	-
*Temperature display [°C]	LED	-
*Temperature display accuracy [°C]	1	-
*The safe temperature of hotplate [°C]	320	-
*Temperature sensor in medium	PT1000	-
*Control accuracy of heating temperature with temperature sensor [°C]	±0.5	-

Items	Specifications	
	LED Digital (Hotplage) model	Classic model
*Residual heat warning	50°C	-
Dimensions (mm)	*220×160×95 220×160×75	
Weight [kg]	*1.4/0.7	0.7
Permitted ambient temperature [°C]	5—40	
Permitted relative humidity	80%	
Protection class acc. to DIN 60529	*IP21/IP42	

*Hotplate model

Table 5

低温圆盘磁力搅拌器

使用说明书

LED 数显加热型磁力搅拌器

LED 数显型磁力搅拌器

标准型磁力搅拌器



请仔细阅读说明书并在说明书的操作指导下安全使用本仪器。

外形和性能指标如有变动，概不另行通知。

目录

前言	1
如何获取帮助	1
质量保证	1
1. 安全事项	2
2. 使用范围	3
3. 检查	3
3.1 开箱检查	3
3.2 装箱清单	3
4. 控制与显示	4
4.1 控制	4
4.2 显示	7
5. 操作	8
6. 加热功能(加热型)	8
6.1 外置温度传感器	9
6.2 余热警告 (HOT)	9
7. 搅拌功能	9
8. 故障诊断	10
9. 维护和清理	10
10. 相关标准	11
11. 技术参数	11

前言

欢迎使用《（加热型）磁力搅拌器使用说明书》。用户在使用本仪器前应仔细阅读本说明书，按说明书指导进行操作，并了解各种注意事项。

如何获取帮助

如果您在安装和使用的过程中遇到任何问题或需要帮助，请及时与制造商/供货商的售后服务部门取得联系，制造商的联系方法如下：




请您准备以下资料：

- 产品序列号（仪器铭牌上）
- 质保卡
- 问题现象的描述
- 您为了解决问题所采取的方法及操作步骤
- 您的电话、传真和 Email 地址等联络方式

质量保证

根据制造商的质量保证条款，在本说明书规定的正常使用条件和操作方法下使用该仪器时，该仪器的保修期为 24 个月（自购买之日起）。由于错误安装与操作、私自拆卸与维修以及其他违反说明书中规定的操作条款造成的仪器性能下降和损坏，不能按照本质量保证进行维修。如出现质保条款中的相关问题，请联系制造商/供货商。

1. 安全事项

	<p>警告!</p> <ul style="list-style-type: none"> 操作仪器前请认真阅读本说明书并遵守安全操作规范。 经过专业培训的人员才能操作本仪器。
	<p>小心烫伤!</p> <ul style="list-style-type: none"> 当触摸仪器底座和加热盘时请注意，本仪器加热盘的最高温度为 280 °C。 仪器关闭后加热盘会有余温，请避免烫伤。
	<p>安全接地保护!</p> <ul style="list-style-type: none"> 为保证安全，使用本仪器前请确认电源插座已良好接地。

- 工作时，请穿戴合适的防护设备，否则可能由于以下事项引发危险：
 - 搅拌液体溅出和蒸汽
 - 释放出的有毒、易燃气体
- 请把仪器置于宽敞通风的区域内使用，并确保工作台面平稳、干净、防滑、干燥及防火。请勿在室外、危险物质环境及水中运行本仪器。
- 缓慢调节转速，出现下列情况时，请调低转速：
 - 仪器运行不稳，容器在加热盘上移动
- 设置温度必须低于样品燃点 50°C。

- 注意避免进行以下危险操作：
 - 搅拌沸点低的易燃样品
 - 搅拌样品过量灌装
 - 使用不安全的容器
- 搅拌致病样品时，必须使用密闭的容器。
- 每次开启仪器之前请确认仪器及其配件未损坏。请使用“配件”章节中列出的标准配件，并依照说明书使用配件，以确保安全。配件务必牢固的连接在仪器上，避免脱离。在装卸配件之前请先断电。
- 外置温度传感器的顶端至少距离容器底部 5-10mm，距容器壁 5-10mm。
- 仪器只能通过拔掉电源插头才能完全断电。
- 请确保使用电源电压跟铭牌要求的一致。
- 确保电源线远离加热盘，不要遮盖仪器。
- 只有经过专业训练的人员才能打开本仪器。
- 请勿在强磁场区域使用本仪器。

2. 使用范围

本仪器是为学校、实验室和工厂等应用环境设计的，用于对液体进行加热及搅拌，供以下环境使用：

- 海拔不超过 2000 米
- 温度在 5℃ 到 40℃
- 安装类型：产品是为了连接室内插座而设计的，电压波动不超过正常值的 $\pm 10\%$
- 仪器间、仪器与墙壁的最小距离为 100mm。

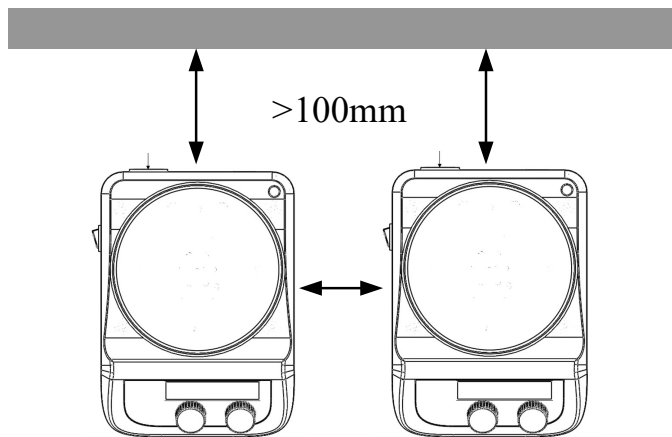


图 1

本仪器不适合在住宅区以及第 1 章中规定的一些限制条件下应用。

3. 检查

3.1 开箱检查

用户如发现任何包装损伤，请在收据上注明。在打开包装后如果发现任何内部损伤，请联系制造商/供货商。



注意：

如发现仪器上有任何明显的损伤，请不要将其连接到电源。

3.2 装箱清单

名称	数量
主机	1 台
电缆	1 根
使用说明书	1 本

表 1

4. 控制与显示

4.1 控制



图 2 LED 数显加热型磁力搅拌器

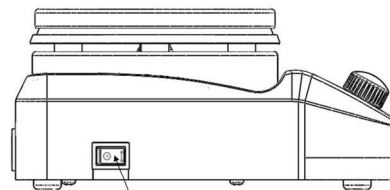


图 3 LED 数显型磁力搅拌器



速度调节旋钮

图 4 标准版磁力搅拌器



电源开关

图 5

	名称	说明
LED 数显加热 磁力搅拌器	温度调节旋钮 Heat	设定室温-280℃范围内的控制温度，按下旋钮开启、关闭加热功能
	速度调节旋钮 Stir	设定 200-1500rpm 范围内的转速，按下旋钮开启、关闭搅拌功能
	LED 显示	液晶显示屏显示仪器当前工作状态及各项设置
	外置温度探头指示	插入外置温度探头 PT1000 时，图标  点亮
	电源开关	打开、关闭仪器主电源
LED 数显磁力 搅拌器	速度调节旋钮 Stir	设定 100-1500rpm 范围内的转速，按下旋钮开启、关闭搅拌功能
	LED 显示	液晶显示屏显示仪器当前工作状态及各项设置
	电源开关	打开、关闭仪器主电源
标准版磁力搅 拌器	速度调节按钮 Stir	设定 0-1500rpm 范围的转速，旋动旋钮开启、关闭搅拌功能
	电源开关	打开、关闭仪器主电源

表 2

4.2 显示

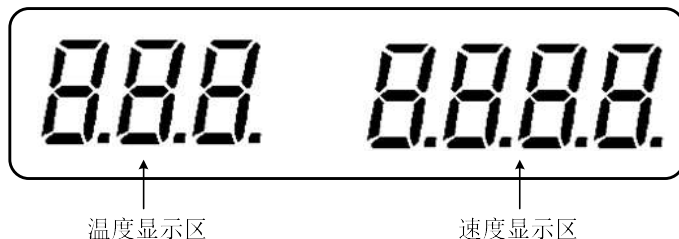


图 6 LED 数显加热磁力搅拌器

显示	说明
温度显示区	加热功能开启后，旋转温度调节旋钮时，LED 显示屏显示温度设置值，5 秒后显示温度实际值。 关闭加热功能后，如果加热盘温度高于 50°C，显示“Hot”，否则显示“OFF”。
速度显示区	搅拌功能开启后，旋转速度调节旋钮时，LED 显示屏显示速度设置值并闪烁，直到实际速度达到设置数值时停止闪烁。

表 3



图 7 LED 数显型磁力搅拌器

显示	说明
速度显示区	搅拌功能开启后，旋转速度调节旋钮时，LED 显示屏显示速度设置值并闪烁，直到实际速度达到设置数值时停止闪烁。

表 4

5. 操作

- 检查铭牌上指定的工作电压与电网电压是否匹配
- 电源插座要求接地良好
- 打开电源，进行开机自检
- 选用合适的搅拌子放入容器中，注入待搅拌样品
- 把容器放到仪器盘面上
- 设置搅拌速度并启动搅拌
- 观察搅拌子工作情况
- 设置加热温度并启动加热（加热型）
- 观察液晶屏上显示的实际温度情况（数显加热型）
- 关闭加热功能（加热型）和搅拌功能

如果上述操作运行正常，说明仪器可以开始正式使用。

如果运行不正常，仪器可能已经在运输过程中损坏，请与制造商/供货商售后服务中心取得联系。



注意：

仪器运行过程中请不要将容器移走，一旦容器脱离仪器的工作盘表面，再次放置容器前要停止搅拌功能，容器放置好后再次启动搅拌。

6. 加热功能(加热型)

系统设置有两个独立的安全回路，用来控制加热盘的温度恒定。安全检测回路可以监测加热盘的温度；加热盘内置的两支温度传感器实现温度监控功能；外接的 PT1000 温度传感器可以监控样品的温度。

- 连接好外置温度传感器
- 用温度调节按钮来设置需要控制的温度；
- 加热功能开启时，液晶屏的左侧显示温度值。
- 按下温度调节按钮开启/关闭加热功能。

仪器开启时设置区的温度为上次关机时的设置温度。

在常用情况下，设置的加热温度显示值与以下实际温度可能有差异：

- 加热盘中心与外沿
- 容器与容器中的样品

这些差异存在是由于热传导特性造成的，为了确保容器内温度的精确性，请使用外置温度传感器 PT1000。

6.1 外置温度传感器

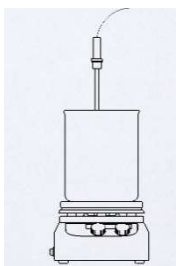



图 6

本机使用的外置温度传感器PT1000，为制造商的标准选配件。接入外置温度传感器后， 图标点亮，旋转温度调节旋钮时，LED显示屏显示温度设置值，5秒后显示温度实际值。安全检测回路限制加热盘温度不超过320°C。相对于加热盘温控，外置温度传感器可以更精确地控制样品的温度。外置温度传感器必须放置在被加热样品中，如果检测到异常情况，加热模块会自动关闭，此时请进行如下操作：

- 关闭电源
- 确保外部温度控制器浸入被加热样品中
- 打开电源，设置目标温度并开启加热功能
- 仪器如果没有恢复正常工作，请联系制造商/供货商。

6.2 余热警告 (HOT)

为防止加热盘烫伤，加热型具有余热警告功能 (Hot)：加热功能关闭后，如果加热盘的温度仍然维持在 50°C 以上，液晶屏上“Hot”字符持续闪烁，警告加热盘温度过高，有烫伤危险。关闭仪器的主开关后，液晶屏交替显示当前加热盘温度和“Hot”字符，这时用户仍然可以设置转速等参数，当加热盘的温度降到 50°C 以下后，仪器自动断电。

如果用户需要立即关闭液晶屏，可以直接拔掉电源插头。主电源故障或者电源插头拔出的情况下，不能运行余热警告功能。

7. 搅拌功能

仪器采用闭环回路控制电机，电机驱动永磁铁旋转，通过转速调节旋钮可以设置电机转速：

- 数显加热型转速调节范围是 200-1500rpm，步进量为 10rpm，按下速度调节按钮可以打开/关闭搅拌功能。
仪器开启时LED显示屏速度显示区的转速为上次关机时的设置转速。
- 标准型转速调节范围是 0-1500rpm，旋转速度调节旋钮即可以打开/关闭搅拌功能。

8. 故障诊断

- 打开电源仪器不启动
 - 请检查电源线是否连接牢靠
- 仪器开机自检不正常
 - 请关闭仪器，重新启动。
- 转速无法达到设定值
 - 该功能在介质液体粘度过高时可能造成不正常减速
- 关闭仪器电源时仪器不断电

加热盘温度高于 50°C，余热警告功能开启
如果故障没有排除，请联系制造商/供货商。

9. 维护和清理

正确地使用和维护仪器，使其处于良好的工作状态，可以延长仪器的使用寿命。常规工作中请保持仪器干燥与洁净，迅速除去溢出液体，使用非研磨清洁剂清理外表面，在所有表面干燥之前请不要连接电源。如果液体或者潮湿固体进入仪器内部，请迅速断开电源不再使用，联系制造商/供货商获得更多建议。

- 保持仪器整洁，切勿使清洗溶液流入机内。
- 维护和清理之前必须断电，请使用我们推荐的方法清理仪器。祛除方法：

染料	异丙醇
建筑材料	含活性剂的水溶液/异丙醇
化妆品	含活性剂的水溶液/异丙醇
食物	含活性剂的水溶液
燃油	含活性剂的水溶液

- 上表没有列出的材料，可以咨询制造商。在采用其他清理方法之前，用户必须与制造商/供货商确认该方法不会损坏仪器。清理仪器时，请戴上合适的防护手套。



注意：

- 电子设备不能用清洁剂清理。
- 送修仪器必须清理，同时避免危险物质的污染，并把仪器放回原始包装箱发送。
- 当产品长期不用时，请将仪器断电存放，并置于干燥、洁净、常温、平稳处。

10. 相关标准

仪器结构符合以下安全标准

EN 61010-1

UL 3101-1

CAN/CSA C22.2(1010-1)

EN 61010-2-10

仪器结构符合以下电磁兼容标准

EN 61326-1

符合以下欧盟标准

EMC 标准: 89/336/EWG

机械设计标准: 73/023/EWG

11. 技术参数

项目	参数	
	LED 数显加热型	标准型
电压 [VAC]	*100~120/200~240 100~240	
频率 [Hz]	50/60	50/60
功率 [W]	*515/15	10
搅拌位点数	1	1
最大搅拌量 (H ₂ O) [l]	3	3
搅拌子最大长度 [mm]	50	50
电机	直流无刷电机	
电机输入功率 [W]	5	5
电机输出功率 [W]	3	3
速度范围 [rpm]	200 – 1500 步长: 10	0 – 1500
速度显示	LED	
工作盘材质	*陶瓷/塑料	
工作盘尺寸[mm]	φ135	
*加热功率 [W]	500	—
*温度范围 [°C]	室温-280 步长: 1	—

项目	参数	
	LED 数显加热型	标准型
*温度显示	LED	—
*温度显示精度 [°C]	1	—
*安全温度 [°C]	320	—
*外置温度传感器	PT1000	—
*外置温度传感器控温精度 [°C]	±0.5	—
*余热警告功能	50°C报警线	—
尺寸 [mm]	*220×160×95 220×160×75	
重量 [kg]	*1.4/0.7	
允许环境温度范围 [°C]	5—40	
允许相对湿度	80%	
DIN EN60529 保护方式	*IP21 IP42	

*加热型

表 5

