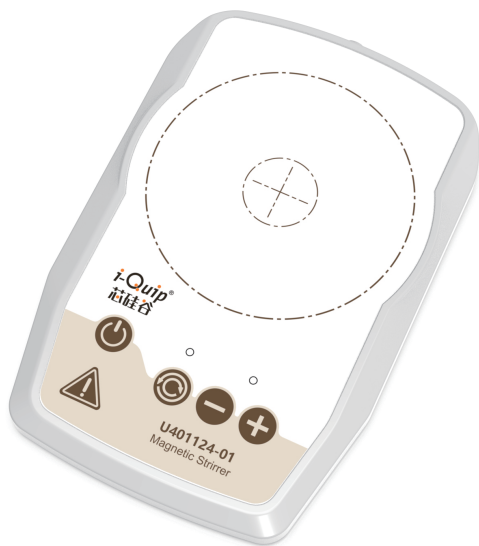


Operating Instructions

使用说明书



Ultra-flat Magnetic Stirrer
超薄磁力搅拌器

Contents

Safety Instructions	2
Operator's Control	4
Unpacking	5
Correct Use	5
Installation	5
Maintenance	6
Accessories	6
Warranty	7
Technical Data	8

Safety Instructions

For your protection

- **Read the operating instructions in full before starting up and follow the safety instructions.**
- Keep the operating instructions in a place where they can be accessed by everyone.
- Ensure that only trained staff work with the appliance.
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.
- **Caution-Magnetism!** Effects of the magnetic field have to be taken in to account (e.g. data storage media, cardiac pacemakers...).
- Wear your personal protective equipment in accordance with the hazard category of the media to be processed. Otherwise there is a risk from:
 - Splashing and evaporation of liquids
 - Ejection of parts
 - Release of toxic or combustible gases



- Use only the AC adapter supplied
- Set up the appliance in a spacious area on an even, stable, clean, non-slip, dry and fireproof surface.
- The base plate must be clean and intact.
- Check the appliance and accessories before hand for damage each time you use them. Do not use damaged components.
- Reduce the speed if
 - The medium splashes out of the vessel because the speed is too high

- The appliance is not running smoothly
- The container moves on the base plate
- Beware of hazards due to:
 - Flammable materials
 - Combustible media with a low boiling temperature
 - Incorrect container size
 - Overfilling of media
 - Unsafe condition of container.
- The appliance may heat up when in use.
- Process pathogenic materials only in closed vessels under a suitable extractor hood. Please contact 4E's if you have questions.
- Do not operate the appliance in explosive atmospheres, with hazardous substances or under water.
- Only process media that will not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways, e.g. through light irradiation.
- Safe operation is only guaranteed with the accessories described in the "Accessories" chapter.
- The centre of gravity of the assembly must lie within the surface on which it is set up.
- The appliance must only be disconnected from the mains supply by pulling out the plug-in power supply unit.
- Abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on.
- When using the PTFE-coated magnetic bars, the following has to be noted: chemical reactions of PTFE occur in contact with molten or dissolved alkaline and alkaline-earth metals, as well as with fine particle powders of metals of the 2. and 3. group of the

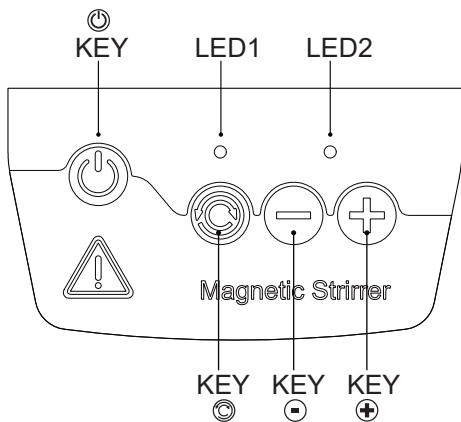
periodical system at temperatures above 300-400°C .
Only elementary fluorine, chlorine trifluoride and alkaline metals do attack PTFE, halogen hydrocarbons have a reversible swelling effect.

To the protection of the equipment

Caution: Equipment may not be poured over with aggressive media! Equipment never under water set!

- The voltage stated on the nameplate must correspond to the mains voltage.
- Do not cover the device, even partially e.g. with metallic plates or film. This results in overheating.
- Protect the appliance and accessories from bumps and impacts.
- Ensure that the base plate is kept clean.

Operator's Control








Unpacking

- Unpacking
- Please unpack the device carefully
- In the case of any damage a fact report must be set immediately (post, rail or forwarder)
- Delivery scope
- Magnetic stirrer
- Plug-in power supply
- Operating instruction

Correct Use

- Use
- For mixing liquids
- Range of use
- Laboratories - Schools - Pharmacies

Installation

- Connect the appliance to a socket (the voltages stated on the nameplates must correspond to the mains voltage).
- Number of revolutions to minimum value set (switch on with  , with  reduce number of revolutions to LED 2 permanently shines)
- Place a magnetic rod in a vessel which is penetrable for magnetic field lines and fill the vessel with the medium to be processed.
- Place the vessel on the centre of the set-up surface.
- Set the speed using  and  (LED 2 will flash)
To elect the reverse mode and invert the direction of stirring at regular intervals, press the button . In the reverse mode, the stirring direction will be inverted every

50 seconds. The LED 1 will flash when the reverse mode is active. The speed setting and reverse mode selection will remain unchanged when the instrument is unplugged.

Maintenance

The appliance is maintenance-free.

Cleaning

Only use cleansing agents which have been recommended by 4E's

Use to remove

Dyes	isopropyl alcohol
Constructions materials	water containing tenside / isopropyl alcohol
Cosmetics	water containing tenside / isopropyl alcohol
Foodstuffs	water containing tenside
Fuels	water containing tenside

- Do not allow moisture to get into the appliance when cleaning.
- Wear protective gloves during cleaning the devices
Before using another than recommended method for cleaning or decontamination, the user must ascertain with 4E's that this method does not destroy the instrument.

Accessories

25mm Stirring bar

20mm Stirring bar

Warranty

In accordance with our warranty conditions, the warranty period is 24 months. For claims under the warranty please contact your local dealer. You may also send the machine directly to our factory, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs. The warranty covers the centrifuge and rotor. It is void in the event of incorrect operation, use of nonstandard spare parts or accessories and unauthorized modification of the rotor or centrifuge. The rotor warranty does not cover normal wear and tear or damage and/or weakening caused by radioactive contamination, cleaning agents, or over tightening of the allen screw.

Technical Data

Plug-in Power Supply Unit	
Rated voltage	VAC 100-240
Rated Frequency	50-60 HZ
Output Voltage	VDC 12
Output Power	min. 3W
Magnetic Stirrer	coil drive
Speed Range	15-1500rpm
Stirred Quantity (max)	500ml (at 1500 rpm with 25mm stirring bar) 800ml (at 1500 rpm with 20mm stirring bar)
Operating time	100%
Protection Class	II
Pollution Degree	2
Overvoltage Category	II
EN 60529 Protection Class	IP 65
Ambient Humidity (Relative)	80%
Ambient Temperature	5 to 40°C (in the operation)
Transport Temperature	-25 to +70°C
Storage Temperature	-10 to +70°C
Material:	Front membrane sheet Polyester
Weight	0.35kg
Installed Weight (max)	2.0kg
Set-up surface	Φ100mm
Dimensions (W x D x H)	115 x 175 x 12mm

目录

前言	10
符合性声明	10
1. 安全操作说明	11
2. 使用说明	13
3. 开箱说明	13
4. 控制按钮说明	14
5. 试运行	15
6. 故障排除	15
7. 清洁与维护	15
8. 技术参数	16
9. 保修	16
10. 选配件	16

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。

前言

欢迎使用《超薄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，了解相关注意事项，并按照说明书中的指导和规范进行操作。

符合性声明

我公司自行负责声明本产品符合

EN 61010-1, UL 3101-1, CAN/CSA C22.2(1010-1),

EN 61010-2-10安全标准和EN 61326-1 EMC标准,

并符合以下欧盟指南:

EMC-指南: 89/336/EWG

仪器指南: 73/023/EWG

1. 安全操作说明



※ 基本信息说明

- 操作仪器前请认真阅读使用说明并遵守安全操作规范。
- 请将本使用说明书放置于使用者方便查阅的地方并妥善保管。
- 操作人员必须受过相关训练才能操作本仪器。
- 电源插座必须接地保护。
- 在处理易燃易爆物质等危险物品时，必须遵守相关的安全和事故预防措施。
- 使用时需考虑磁场对周边环境的影响，如数据存储器，心脏起搏器。

※ 使用环境说明

- 禁止在爆炸性环境中使用本仪器；本仪器不具有防爆功能。
- 请将仪器放置于平稳、清洁、防滑的台面上工作。
- 请勿将仪器放置于强磁场中工作。
- 每次使用前请检查仪器和配件并确保无损，请勿使用损毁的仪器和配件。

※ 搅拌介质说明

- 请确保使用的介质在搅拌过程中不会出现起火，闪燃，喷发，爆炸等危险。
- 请考虑到任何可能的污染和有害的化学反应。
- 请选择合适容量的容器来盛放介质，避免搅拌过程中介质溅出。
- 请选择合适材质的容器来盛放介质，避免搅拌过程中容器破裂。
- 处理病原体介质时，请使用密闭容器并在合适的通风橱中进行。
- 由于磁力搅拌子的高速转动，有可能导致搅拌介质的升温。
- 磁力搅拌子的磨损产生的碎片有可能接触到所处理的介质。

※ 仪器操作说明

- 根据处理介质的种类，在操作仪器时请佩戴合适的防护装置，避免因液体溅出或释放出有毒或者可燃气体对人体造成的伤害。
- 出现以下状况时，请降低转速或关机：
 - 由于转速过高导致所处理的介质溅出容器。
 - 仪器运转不平稳。
 - 容器在工作盘上发生移动。
 - 仪器出现故障。

※ 配件使用说明

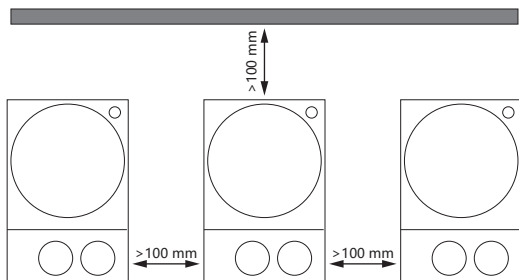
- 只有使用机器原装选配件才可确保安全。
- 安装配件前请先断开电源。
- 使用配件时，必须安装牢固，且在安装完毕后整个系统的重心不能超出系统之外。

※ 电源使用说明

- 输入电压必须与仪器铭牌上标示的电压一致。
- 机器关机后电路板仍会与电源接通，只有拔下电源插头才能完全切断电源。

※ 仪器保护说明

- 除非是本产品授权的维修人员，否则请不要拆开仪器。
- 确保仪器和配件免受挤压和碰撞。
- 请确保仪器盘面清洁。
- 确保仪器放置间距合理：
 - 仪器之间至少 100 mm。
 - 仪器距离四周墙壁至少 100 mm。



2. 使用说明

※ 应用

- 仪器适用于加热，搅拌物质。

※ 使用区域

- 在研究、教学、商业或工业领域中的实验室式的室内环境。
- 出现下列情况时我们将无法确保使用者的安全：
 - 如果使用了非厂家提供或推荐的选配件。
 - 如果仪器操作有误或者违反了厂家的操作规范。
 - 如果仪器或者电路板被第三方非法修改。

3. 开箱说明

※ 开箱检查

- 请小心拆除包装并检查仪器
- 如果发现任何破损，请填写破损报告并立即通知货运公司



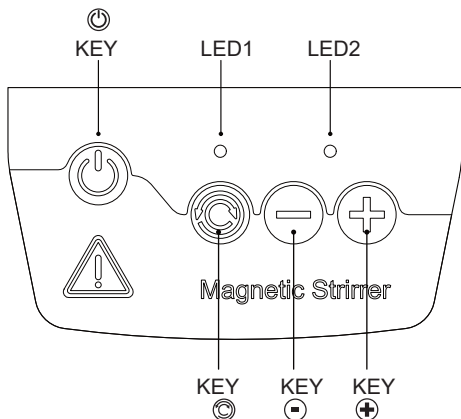
注意：

如果设备有明显损坏，请不要连接电源线。

• 装箱清单

名称	数量
主机	1
电源适配器	1
磁力搅拌棒	1
使用说明书	1

4. 控制按钮说明



⏻ 启动/停止键	启动/停止运行
LED1指示灯	正反转功能开启时亮起。
LED2指示灯	设置转速时亮起。
⦿ 转速增加键	可增大转速设定值
◻ 转速减少键	可减小转速设定值
⊕ 正反转键	短按正反转键，可实现单一转向模式和正反转模式的切换；正反转模式在转速稳定后30秒自动切换方向。

5. 试运行

- 确保机器所需电压符合电源电压。
- 确保插座已经正确接地。
- 打开并开始初始化。
- 在容器中加入样品并使用适当的搅拌棒。
- 将容器放在工作盘上。
- 设定目标速度并开始搅拌。
- 观察搅拌棒情况和指示灯显示。

如果上述操作正常，则设备可以良好运行。如果这些操作异常，设备可能在运输途中损坏，请联系技术支持的制造商/供应商。

6. 故障排除

- 开机时设备无法工作
 - 检查电源线是否连接正确
- 开机自检故障
 - 关闭设备电源，然后重新启动

7. 清洁与维护

本仪器无需特殊保护。

清洁

- 清洁仪器须断开电源！
- 清洁仪器时请仅用本公司认可的清洁液：含活性剂的水溶液和异丙醇。
- 清洁仪器时请佩戴防护手套。
- 清洁时，请勿将电子设备放置于清洁剂中。
- 清洁时，请勿让潮气进入仪器。
- 当采用其他非本公司推荐的方法清洁时，请先向我们确认清洁方法不会损坏仪器。

维修

在送检您的仪器之前，请先清洁并确保仪器内无任何对人健康有害的物料残留。

如需维修服务，请使用原包装箱妥善包装后将仪器寄回。如原包装不存在时，请采用合适的包装。

8. 技术参数

外形尺寸[长x宽x高mm]	175*115*12
工作盘尺寸[mm]	Φ100
工作盘材料	聚酯膜
搅拌原理	电磁驱动
转速范围[rpm]	50- 1500
搅拌子最大长度[mm]	25
最大搅拌量 (H ₂ O, ml)	800
允许环境温度[°C]	5 - 40
允许相对湿度	≤80%
DIN EN 60529 保护方式	IP65
额定电压[VAC]	100-240
输入电压 [V DC]	12
频率[Hz]	50/60
功率[W]	6
重量[kg]	0.3

9. 保修

根据本公司保修规定本机保修 2 年。保修期内如果有任何问题请联络您的供货商，您也可以将仪器附发票和故障说明直接发至我们公司，经我方事先确认后运费由贵方承担。保修不包括零件的自然磨损，也不适用于由于过失、不当操作或者未按操作说明书使用和维护引起的损坏。

10. 选配件

- 只有使用机器原装选配件才可确保安全。
- 安装配件前请断开电源。
- 使用任何配件时都须遵守选配件的操作说明。