

Multi-position (Hotplate) Magnetic Stirrer

User Manual



10-Channel Analog Hotplate Magnetic Stirrer

10-Channel Analog Magnetic Stirrer

16-Channel Analog 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.....	2
2 Proper Use	3
3 Inspection	3
3.1 Receiving Inspection	3
3.2 Listing of Items	3
4 Trial Run.....	4
5 Control Elements.....	4
6 Operation.....	5
7 Faults	5
8 Maintenance and Cleaning	6
9 Associated Standards and Regulations	6
10 Specifications	7

Preface

Welcome to the “Multi-position (Hotplate) Magnetic Stirrer User Manual”. Users should read this Manual carefully, follow the instructions and procedures, and beware 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 following information:

- Serial Number (on the rear panel)
- 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 dealer. You may also send the instrument direct to our works, enclosing the invoice copy and by giving reasons for the claim.

1 Safety Instructions



Warning!

- Read the operating instructions carefully before use.
- Ensure only trained staff uses the instrument.
- Forbid to heat the substances with low-burning point or easy-volatile.



Risk of burn!

- Caution when touching the housing parts and the heating plate. The heating plate can reach temperatures of 120 °C.
- Pay attention to the residual heat after switching OFF the instrument.



Protective ground contact!

- Make sure the socket is grounded before use.

• Wear the personal safety items 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

• Gradually increase the speed, reduce the speed if :

- The stirring bar breakaway because of too high speed
- The instrument is not running smoothly, or container moves on the base plate.
- Temperature must always to be set to at least 25 °C lower than the burning point of the media used.
- Beware 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.
- If the case of the stirrer bar is PTFE, please note :
 - Elemental fluorine, three fluoride and alkali metals will corrode the PTFE and Halogen alkanes make it expansion at room temperature
 - Molten alkali , alkaline earth metals or their solution, as well as the powder in second and third ethnic of the periodic table of elements will have chemical reaction with PTFE when temperature reaches 300 ~ 400 °C .
- The voltage stated on the label must correspond to the main power supply
- Ensure that the mains power supply cable does not touch the heating base plate. Do not cover the device.

- The instrument only to be opened by trained experts
- Keep away from high magnetic field.
- Observe the minimum distances between the devices, between the device and the wall and above the assembly (min. 100 mm).

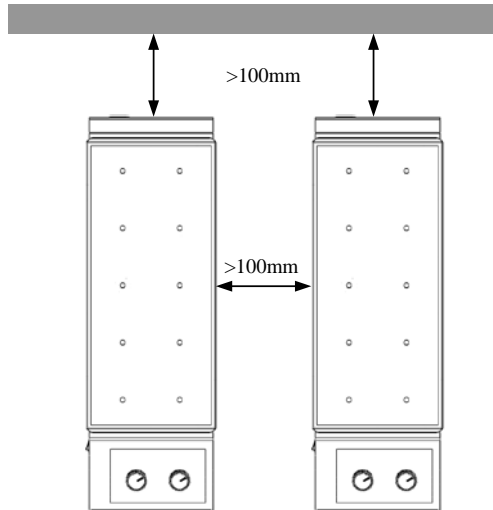


Figure 1

2 Proper Use

The instrument is designed for mixing and/or heating liquids in schools, laboratories or factories. 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. If it happens, please contact manufacturer 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 packing includes the following items:

Items	Qty
Main unit	1
Power cable	1
Stirrer bar	2
User manual	1

Table 1

4 Trial Run

- Make sure that the required operating voltage and power supply voltage match.
- Ensure that socket must be earthed.
- Power ON the instrument.
- Add the medium into the vessel with a stirring bar.
- Put the vessel above spots on the plate.
- Set the rated stirring speed and temperature (MS-H-S10) and start stirring.
- 16 stirring positions in total, individually controlled for each set with 4 positions.(16-Channel Analog Magnetic Stirrer)
- 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 manufacturer for technical support.

5 Control Elements

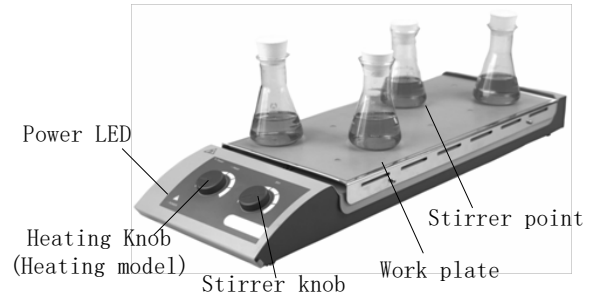


Figure 2 10-Channel model

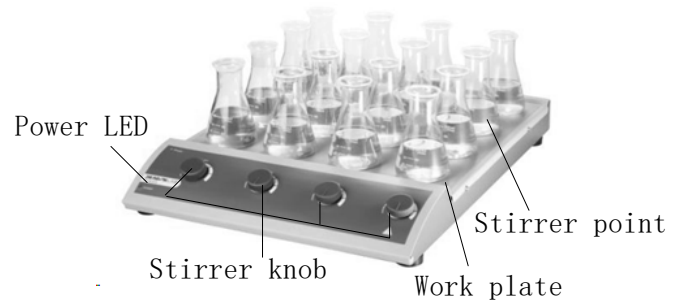


Figure 3 16-Channel model

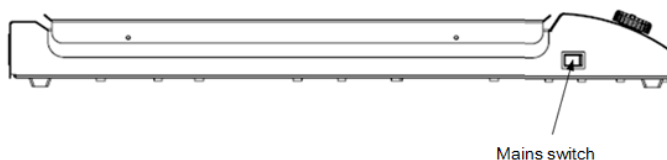


Figure 4

Items	Descriptions
Speed control knob	Set the rated stirring speed in the safe stirring range from 0 to 1100 rpm. The function “Stirring” is switched ON or OFF via the knob. 16-Channel Analog Magnetic Stirrer: 16 stirring positions in total, individually controlled for each set with 4 positions.
Temperature control knob	Set the rated temperature in the safe temperature range from room temperature to 120°C. The function “heating” is switched ON or OFF via the knob.(Heating model)
LED Power	When the device is switched ON, the LED power is lit.
Mains switch	Switch ON or OFF.

Table 2

6 Operation

- Ensure the temperature control knob and the speed Control knob at the lowest position .Put the device on the stable and safe place and plug in the mains power.

- Turn ON the power switch and LED power is lit.
- Turn the speed control knob to set the rated rotary speed in the safe speed limit from 0 to 1100 rpm.

Note: 16-Channel Analog Magnetic Stirrer: 16 stirring positions in total, individually controlled for each set with 4 positions.

- Turn the temperature control knob to set the rated temperature in the safe limit from room temperature to 120°C.

- The device begins to work.

7 Faults

- If a unit fault happens, please power down the instrument.
- Switch ON the unit again.
- The stirring function will continue to operate at the speed set point before the fault took place.
- The heating function will continue to operate at the set point before the fault took place.

- If the problem is not solved, please contact the technical service center.

8 Maintenance and Cleaning

- Proper maintenance can keep instruments working in a good state and lengthen its lifetime.
- Be careful not spray the cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.
- Only use cleanser that we advised as below:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside Isopropyl alcohol
Cosmetics	Water containing tenside Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

Table 3

- Wear the proper protective gloves during cleaning of the instrument.
- Before using other method for cleaning or decontamination, the user must ascertain with the

manufacturer that this method does not destroy the instrument.

- Send in the case of service the equipment back in the packaging carton. Storage packing is not sufficient for the back dispatch. Use additionally a suitable transportation packing.

9 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: 2004/108/EC
Machine guidelines: 73/023/EWG

10 Specifications

Items	Specifications	
	10-Channel	16-Channel
Voltage [VAC]	200-240/100-120 (heating model) 100-240(non-heating model)	100-240
Frequency [Hz]	50/60	50/60
Power [W]	20(non-heating model) 490(heating model)	40
Stirring point position quantity	10	16
Max. stirring quantity of single Stirring position(H ₂ O) [l]	0.4	0.4
Stirring position interval [mm]	90	90
Single stirring position speed error [%]	5	5

Max. magnetic bar [mm]	30	30
Motor type	brushless motor	DC motor
Motor rating input [W]	12	12
Motor rating output [W]	4	8
Speed range [rpm]	0 – 1100	1 – 1100
Speed display	Scale	Scale
Heating Power[W]	470(Hotplate model)	-
Temperature range[°C]	RT~120(Hotplate model)	-
Temperature medium max. (dep. on vessel) [°C]	70(Hotplate model)	-
Temperature display[°C]	Scale(Hotplate model)	-
Dimension of Plate [mm]	180×450	365×345
Dimensions (W×D×H) [mm]	182×622×65	380×622×65
Weight [kg]	3.2	6
Permitted ambient temperature[°C]	5 – 40	5 – 40

Permitted relative humidity	80%	80%
Protection class acc. to DIN 60529	IP42	IP42

多通道（加热型）磁力搅拌器

使用说明书



10 通道标准加热型磁力搅拌器

10 通道标准型磁力搅拌器

16 通道标准型磁力搅拌器

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. 控制部分.....	4
5. 操作.....	5
6. 故障诊断.....	5
7. 维护和清理.....	5
8. 相关标准.....	6
9. 技术参数.....	6
10. 订货信息.....	错误!未定义书签。

前言

欢迎使用《多通道（加热型）磁力搅拌器使用说明书》。用户在使用本仪器前请仔细阅读此说明书，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。

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。

联系方式：




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">• 在使用仪器之前请仔细阅读本说明书，并根据以下安全说明进行操作。• 只有经过专业培训的人员才可以操作本仪器。
	<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 120 °C.• 关闭仪器后，请注意加热盘的余温，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接地良好。

- 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：

- 转速过高导致搅拌子失速
- 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 25°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。
- 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 0℃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±10%
- 仪器间、仪器与墙壁的最小距离为 100mm。

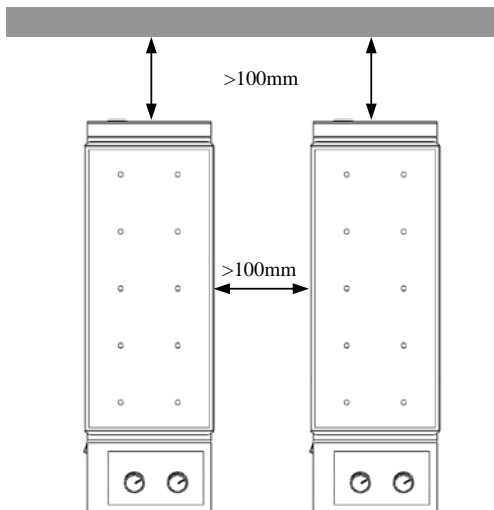


图 1

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
搅拌子	2 个
使用说明书	1 本

表 1

4. 控制部分



图 2 10 通道(加热)磁力搅拌器



图 3 16 通道磁力搅拌器

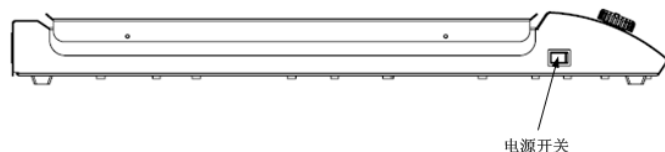


图 4

名称	说明
速度调节旋钮 Stir	设定 0~1100rpm 范围的转速, 旋动旋钮开启、关闭搅拌功能。 16 通道磁力搅拌器有四个速度调节旋钮, 每个旋钮控制该列 4 个工作点的搅拌速度。
温度调节按钮 Heat (加热型)	设定室温~120℃ 范围的控制温度。旋动旋钮开启、关闭加热功能。
电源指示灯 Power	打开电源后, “Power”灯点亮。
电源开关	打开、关闭仪器主电源。

表 2

5. 操作

- 检查铭牌上指定的工作电压与电网电压是否匹配
- 检查插座是否接地良好
- 打开电源
- 选用合适的搅拌子放入容器中，注入待搅拌样品
- 把容器放到搅拌盘上相应的工作点上
- 旋转速度调节旋钮，开始搅拌

注意：16 通道磁力搅拌器有四个速度调节旋钮，每个旋钮控制该列 4 个工作点的搅拌速度。

- 旋转温度调节旋钮，开始加热（加热型）
- 关闭加热（加热型）和搅拌旋钮；

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. 故障诊断

- 请先关闭仪器，重新启动
- 搅拌功能以故障发生之前设置的转速继续运行

- 加热功能以故障发生之前设置的温度继续运行
如果故障没有排除，请联系制造商/供货商。

7. 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。

8. 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：2004/108/EC

仪器标准：73/023/EWG

9. 技术参数

项目	参数	
	10 通道	16 通道
电压 [VAC]	100-240 *200-240/100-120	100-240
频率 [Hz]	50/60	50/60
功率 [W]	20/ 395*	40
搅拌点位数量	10	16
每个搅拌位最大搅拌量(H ₂ O) [l]	0.4	0.4
搅拌点位间距 [mm]	90	90
单个搅拌点位转速偏差 [%]	5	5
搅拌子最大长度 [mm]	30	30
电机类型	直流无刷电机	直流电机
电机输入功率 [W]	12	12
电机输出功率 [W]	4	8

项目	参数	
速度范围 [rpm]	0 - 1100	1 - 1100
转速显示	刻度	刻度
加热功率 [W]	375*	-
加热温度范围 [°C]	室温-120*	-
介质加热最高温度 (根据容器) [°C]	70*	-
温度显示	刻度*	-
工作盘尺寸 [mm]	180×450	365×345

项目	参数	
外形尺寸 [mm]	182×622×65	380×622×65
重量 [kg]	3.2	6
允许环境温度 [°C]	5-40	5-40
允许相对湿度	80%	80%
保护等级	IP42	IP42

*加热型