

Multi-position (Hotplate) Magnetic Stirrer

User Manual



MS-H-S10 10-Channel Analog Hotplate Magnetic Stirrer

MS-M-S10 10-Channel Analog Magnetic Stirrer

MS-M-S16 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.

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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:

Dragon Laboratory Instruments Limited

No.31, Yu An Road, Zone B of TianZhu Airport Industrial Park, Shunyi District, Beijing, 101318 P. R. China

Tel: 86-10-85653451/52/53

Fax: 86-10-85653383

E-mail: info@dragon-lab.com

Service Hotline: 400-1100-556

Http://www.dragon-lab.com

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

	<p>Warning!</p> <ul style="list-style-type: none">• 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.
	<p>Risk of burn!</p> <ul style="list-style-type: none">• 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.
	<p>Protective ground contact !</p> <ul style="list-style-type: none">• 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).

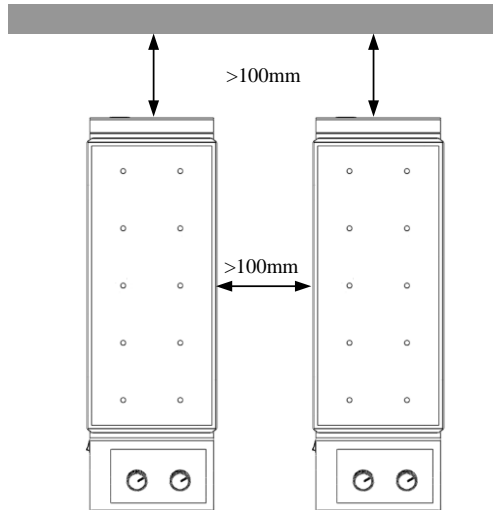


Figure 1

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

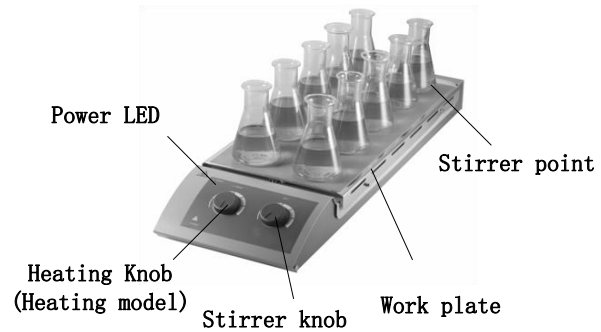


Figure 2

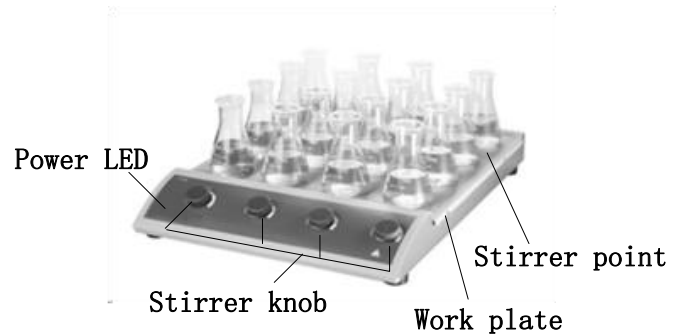


Figure 3

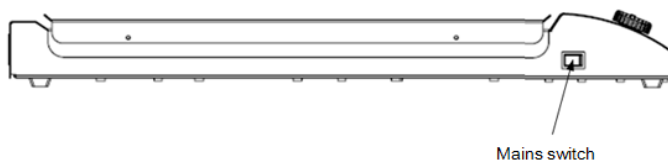


Figure 4

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: 89/336/EWG
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

11 Order Information

811311027777	MS-H-S10 10-Channel Classic Magnetic Stirrer, stainless steel plate with silicone film ,USA plug, 100V-240V/50Hz/60Hz
811311017777	MS-H-S10 10-Channel Classic Magnetic Stirrer, stainless steel plate with silicone film, Cn plug, 100V-240V/50Hz/60Hz
811311037777	MS-H-S10 10-Channel Classic Magnetic Stirrer, stainless steel plate with silicone film ,Euro plug, 100V-240V/50Hz/60Hz
811311047777	MS-H-S10 10-Channel Classic Magnetic Stirrer, stainless steel

	plate with silicone film ,UK plug, 100V-240V/50Hz/60Hz
81132102 7777	MS-M-S10 10-Channel Classic Hotplate Magnetic Stirrer, stainless steel plate with silicone film, heating temperature up to 120 °C ,USA plug,100V-120V/50Hz/60Hz
811321017777	MS-M-S1010-Channel Classic Hotplate Magnetic Stirrer, stainless steel plate with silicone film, heating temperature up to 120 °C , Cn plug,200V-240V/50Hz/60Hz
811321037777	MS-M-S1010-Channel Classic Hotplate Magnetic Stirrer, stainless steel plate with silicone film, heating temperature up to 120 °C , Euro plug,200V-240V/50Hz/60Hz
811321047777	MS-M-S1010-Channel Classic Hotplate Magnetic Stirrer, stainless steel plate with silicone film, heating temperature up to

	120 °C ,UK plug,200V-240V/50Hz/60Hz
815211027777	MS-M-S1616-Channel Classic Magnetic Stirrer, steel plate with silicone film , USA plug, 100V-240V/50Hz/60Hz
815211017777	MS-M-S1616-Channel Classic Magnetic Stirrer, steel plate with silicone film , Cn plug, 100V-240V/50Hz/60Hz
815211037777	MS-M-S1616-Channel Classic Magnetic Stirrer, steel plate with silicone film , Euro plug, 100V-240V/50Hz/60Hz
815211047777	MS-M-S1616-Channel Classic Magnetic Stirrer, steel plate with silicone film , UK plug, 100V-240V/50Hz/60Hz

18900009	Stirrer bar (25mm x 8mm) , 1pc/pk
12500005	Stirrer bar (30mm x 6mm) , 1pc/pk
18900011	Stirrer bar (40mm x 8mm) , 1pc/pk
18900015	Stirrer bar remover, 1pc/pk

Accessories	
18900006	Stirrer bar (10mm x 6mm) , 1pc/pk
18900007	Stirrer bar (15mm x 8mm) , 1pc/pk
18900008	Stirrer bar (20mm x 8mm) , 1pc/pk



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