

May, 2007 revised
Covering Model
MS-300 / 200 / 100

HOT PLATE & MAGNETIC STIRRER



Before operating this unit, please read and understand this manual completely and keep it for future reference.



HOT PLATE & MAGNETIC STIRRER

- Safety warnings



Before operating, read and understand safety warnings thoroughly and use this unit properly.

Keep these warnings in mind for your safety.

Safety Warnings: Danger!,Warning!,Caution!





Danger! Failure to observe this instruction can result in a fatal injury.





Warning! Failure to observe this instruction may cause a fatal injury



Caution! Violation of this instruction and improper use may cause a serious injury and property damages.

 Do not Contact	 Caution!
	Fire or heat injury may occur. Do not touch or put objects near the hot plate. (HY-HS11 / HY-HS12 Model)

 Electric Shock	 Warning!
	A risk of electric shock. Be sure to install a ground wire. Electric shock may occur without a ground wire installation. (HY-HS11 / HY-HS12 / HY-HS13 Model)

HOT PLATE & MAGNETIC STIRRER



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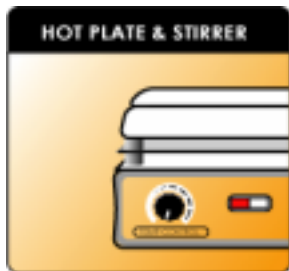
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HOT PLATE & MAGNETIC STIRRER

1. Features and uses of the product

This unit can heat, stir, and mix test samples simultaneously.

This product has following features for user's safety and convenience.

- 1) Heating and stirring can operate separately.
- 2) Easy controls of heating temperature and stirring speed.
- 3) The ceramic coated aluminum top plate possessing a strong chemical durability and a quick heating ability has an excellent durability for long time use.
- 4) Efficient design for laboratory work.

2. Installation location



Caution!

Improper installation location can cause a malfunction or an accident.

Improper installation location can cause a malfunction or an accident.

- 1) Install this unit in a firm area avoiding heat, humidity, dust, and vibration.
- 2) Place it on a horizontal area.
- 3) Do not place it near flammable materials
- 4) Install an electrical grounding to avoid any electric shock.

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3. Technical Specifications

MODEL		MS-300	MS-200	MS-100
Type		Hotplate Mag stirrer	Mag stirrer	Hot plate
Max plate temperature		up to 400°C	-	up to 400°C
Strring	Speed	100 – 1500 / min		-
	Capacity	100ml – 3l		-
	Control	Electronic		-
Power		620W	20W	600W
Fuse Capacity		250V 10A	250V 7A	250V 10A
Dimension	Plate area	180 × 180mm		
	Overall	(W×D×H) 200×225×120mm		
Top plate		Ceramic coated		
Electrical Requirement		220V 50/60Hz or 110V 50/60Hz (option)		
Weight		3.5kg	3kg	2.5kg

4. Description of each part



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5. Speed and Temperature Controls

The speed controller knob and the temperature controller knob are located in front panel. These controllers switch on/off the stirrer and heater respectively, and also adjust desired speed and temperature.

Stirrer Speed Controller



Switch on the stirrer by turning the speed controller knob clockwise very slowly.

Speed will increase by turning the controller knob clockwise.

If you turn controller knob rapidly, the spin bar will jump.

Be sure to turn the controller very slowly.

(Model : MS-300/200)

Heating plate(Hot plate) Controller



Switch on the heating plate by turning the controller knob clockwise.

Temperature will increase by turning the controller knob clockwise.

Control it to the desired temperature by use of a thermometer (not included). (Model : MS-100)

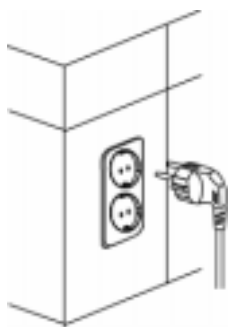
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6. Cautions



Warning!

Do not cover the unit with aluminum foil.
Warning! If you operate the unit covered with aluminum foil, the heating plate, the magnetic, and the heater may be damaged due to heat insulation



Caution!

Remove the plug from an outlet by holding the plug.
Do not unplug it by pulling on the power cord.
Do not use acid solution, benzene, sharp objects, detergent, and hot water to wash the unit. It may cause change of color or damage..

- Always keep the ceramic-coated hot plate clean.
- Strong corrosive agents can damage the surface of the unit.
(Do not wash the unit with flammable material such as benzene.)
- Do not open the covers and do not try to repair yourself. Contact an authorized service center or your dealer for service.

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7. Maintenance and Storage



Warning!

- Be sure to unplug the unit from an outlet before cleaning the unit to avoid an electric shock.

To clean the surface of the unit.

- Use a sponge or a soft cloth with a neutral detergent
- Wipe the unit with a dry cloth.
- Do not use organic solvent.

To clean the electric parts.

- Always use a dry cloth.

If this unit is not used for a long period of time.

- Remove the plug from an outlet.
- Clean the unit with a soft towel.
- Wrap and store it

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8. Additional Information



This unit has a fuse built-in.
Replace a blown out fuse with a reserved one stored
in the back of the unit.



This unit is equipped with the grounded plug. Use a
grounded outlet for safe operation.



! Outlets that have metal contacts
are grounded outlets.

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9. Troubleshooting



Warning!

- Switch off the unit before any maintenance and disconnect the power cord
- If you are not authorized personnel, do not open, repair, or modify the unit. It can cause a fire or malfunction inflicting an injury upon people.

Symptom	Corrective Actions
The unit does not operate	<ul style="list-style-type: none">- Make sure the power cord is plugged.- Make sure the switch is on.- Check a power outage.- Check the fuse- In case of fuse blown out. Replace it with a new one.
Decrease of heating capacity	Contact an Authorized Service Center or your dealer.
Decrease / Increase of Stirring capacity	Contact an Authorized Service Center or your dealer.



10. Warranty

- 1) We provide free repair service for this product against defects in material or workmanship for one year, when it is used under appropriate conditions. Before requesting service, check the followings;
 - Malfunctioned part and conditions
(a detailed explanation is required)
 - Model Number
 - Purchased date
- 2) In case of followings, the repair service will be charged.
 - Damage due to improper operation, modification, or unauthorized attempt to repair
 - Damage due to acts of God such as fire, flood, and improper voltage supply.
 - Damage due to not following operating instructions.
- 3) Contact authorized service center or your dealer for additional information

These specifications are subject to change without notice.



HumanLab Instrument Co.

B-401, Jaeun Bldg, #417-33,
Younghwa-dong, Jangan-gu,
Suwon-si 440821, Korea

Tel : +82-31-256 3403
Fax : +82-31-256 3404
Email : sales@humanlab.co.kr
www.humanlab.co.kr



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