

# Instruction Manual

- Hot plate
- Magnetic stirrer
- Hot plate Magnetic Stirrer



## About This Manual

This manual is designed to assist you in optimal usage of your new hot plate, stirrer or hotplate stirrer.

## Product Voltages

Hot plates, stirrers, and stirrer/hot plates are available in different voltages. Before initial use, check that the unit you received is the correct voltage for your location.

## Warranty

Misung Scientific Co., Ltd. warrants that this product will be free from defects in material and workmanship for a period of two (2) years from date of purchase. This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in the supplied instruction manual.










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Safety Information:

This instruction manual contains important operating and maintenance instructions which must be read, understood, and followed by the product user. Failure to use this product according to this instruction manual may degrade or defeat the protection normally provided by this product. Read this instruction manual prior to product use and keep this instruction manual for future reference. The precautions are composed of DANGER, WARNING and CAUTION

Product Symbols

	DANGER	Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.
	WARNING	Is used to alert operators to an operating procedure, practice or condition that, if not strictly observed, can result in severe injury or loss of life.
	CAUTION	Indicates a potentially hazardous situation that may result in minor or moderate injury
	Hot Surface	<div> WARNING</div> <div> CAUTION</div> <p>Touching the reactor block surfaces and vials while hot can cause serious burns.</p>
	Protective Earth Ground	<div> WARNING</div> <div> CAUTION</div> <p>This product requires a protective earth connection. If not provided with a plug on a cord, connect positive earth to this terminal.</p>

Warnings

Personal Injury

- Do not use this product in a manner other than as stated in the Operating Conditions section of this manual as the protection provided by the equipment may be impaired.
- This product is designed for use in laboratory environments by persons knowledgeable in safe laboratory practices.
- Always wear safety glasses and other appropriate protective equipment when operating this product.

Electric Shock

- This product must be connected to a grounded power outlet for safe functioning.
- Use only the power cord supplied with the product.
- The power cord is the device available for full disconnect from mains input.
- Position the product for use so that the power cord can be easily disconnected without having to move the product.
- Disconnect the power cord before moving or cleaning the unit.

Product Damage

- Keep the product dry and clean
- Do not immerse the product for cleaning.
- Do not heat or stir volatile or flammable materials.
- The ceramic coated top surface may break if impacted
- The maximum sample volume stirring capacity is 5L
- These units are not explosion or spark proof.
- Do not operate this product near volatile or flammable materials.
- Do not use this product with a metal vessel.

Operating Conditions

Your Mtops hot plate, stirrer or stirring hot plate is a general purpose heating and/or stirring plate designed for laboratory procedures requiring precise control of temperature and/or stirring speed. Your hot plate, stirrer or stirring hot plate has the following properties:

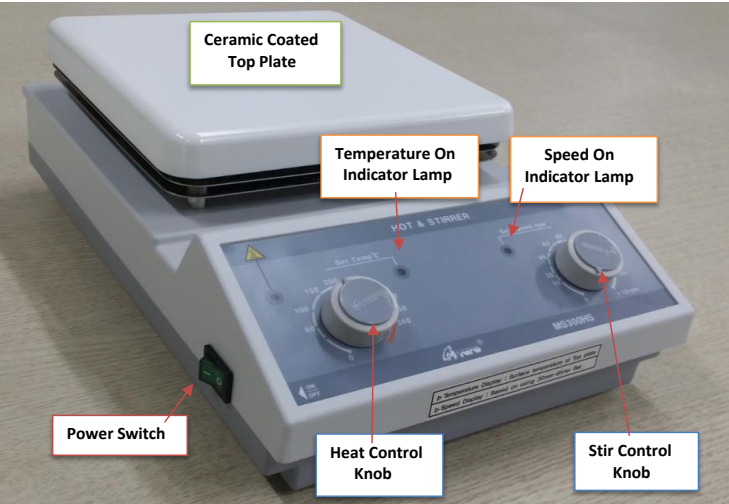
- Ceramic coated top plate: Ceramic coated top plate is corrosion proof, temperature resistant and resists aggressive fluids.
- Coated in a pure white plate allows for easy observation of sample color change during use.
- The top plate allows for quick thermal conduction and uniform surface temperature.
- This device uses an electronic Analog temperature controller to control temperature
- The Mtops Hot Plate Stirrers were designed to start and stop smoothly to prevent fluid spill over from rapid turnover and decoupling of stir bar.
- The Mtops hot plate has an electronic feedback control which will accurately maintain temperature.

Mtops hot plates, stirrers, and stirrer/hot plates are designed to provide safe functioning under the following conditions:

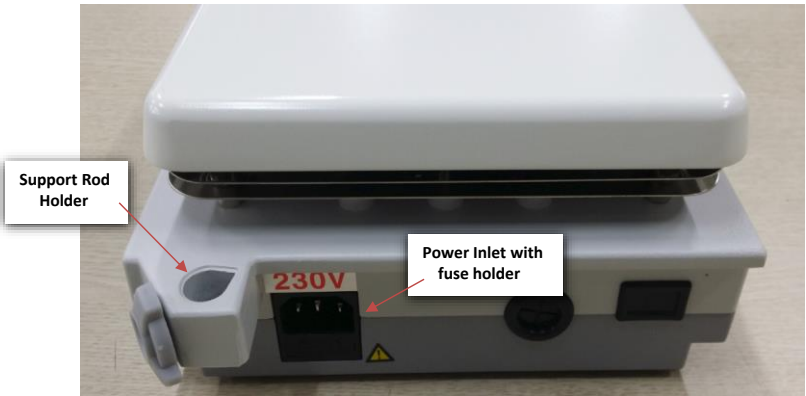
- Indoor use
- Altitude up to 2000 meters (6,500 feet)
- Ambient temperatures of 0°C to 40°C
- Product should be placed on a flat surface at least 30.5 cm (12") from walls, 122 cm (48") from ceilings, and 30.5 cm (12") from other hot plates if using multiple units.
- Maximum relative humidity of 85% for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C.
- Pollution Degree 2: Any foreign matter that may accumulate on or within the product during normal use is not electrically conductive.
- Installation Category II: Product is designed for connection to an electrical branch circuit inside a building with main supply voltage fluctuations not exceeding ±10% of the nominal voltage.

Product Controls and Indicators:

Front side:



Rear Side:



Instructions for Use:

- 1) Turn temperature and speed to zero before plugging in. And connect the Main power cord to power supply. Place your container or heating bath with the magnetic stirrer bar. Stirrer bar should be placed in center of hot plate
- 2) Place your container or heating bath with magnetic stirrer bar. Stirrer bar should be placed in Center of hot plate.
- 3) Turn Power Switch ON

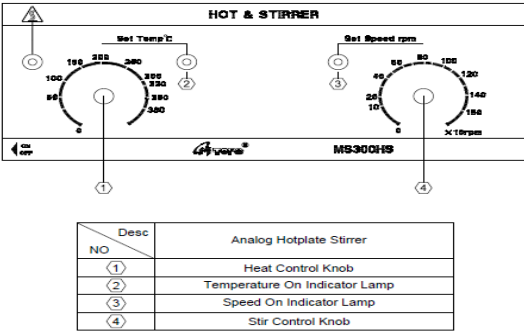
Stirring Instructions  
*MS300HS, MS200*

1. Fill vessel with solution to be stirred.
2. Place stir bar into vessel.
3. Place vessel in the center of the top surface.
4. Turn power switch ON. Then Hot Top Indicator Lamp will illuminate.
5. Turn Stir Control Knob until the desired speed.
6. Speed On Indicator Lamp will illuminate when the motor runs.
7. Heating and stirring can be performed simultaneously on the MS300HS models which offer both heating and stirring functions.
8. When the desired stirring is complete, turn the Stir Control Knob to "0" position. Allow stir bar to cease rotation before removing the vessel from the unit.
9. Disconnect Main power cord from the unit.
10. Keep the product dry and clean disconnecting Main power cord when the unit is not used for a long time.

Note:

- 1) Range of speed control : 100~1500 RPM
- 2) Speed control knob in extreme left (CCW) position stops operating.
- 3) If motor does not run upon turning the knob, increasing until 100rpm or more

Please note that the viscosity of the stirred material will affect the ability of the stir bar to remain coupled to the rotating ring magnet. Materials of high viscosity must be stirred at slower speed settings



Heating Instructions

MS300HS,MS100(HP100)

- 1. Fill vessel with solution to be heated.
- 2. If using a MS300HS and the stirring function, place stir bar into vessel.
- 3. Place vessel in the center of the top surface.
- 4. Turn power switch ON. Then Hot Top Indicator Lamp will illuminate.
- 5. Heat Control Knob until the desired temperature.
- 6. Temperature Indicator Lamp will illuminate when the heater runs
- 7. When the desired heating is complete, turn the Heat Control Knob to “0” position. And remove the vessel from the unit.
- 8. Disconnect Main power cord from the unit
- 9. Keep the product dry and clean disconnecting Main power cord when tehn unit is not used for a long time.




**Caution:** The Hot Top Indicator will turn OFF when the power switch is OFF even if the temperature of the top surface is still hot to touch.

Product Repair:

There are no direct user serviceable components inside this series of products.

Please contact you Mtops Distributor for repair or maintenance issues.

Product Maintenance and Storage:



Caution

Disconnect the plug before cleaning !

Power

Inspect the power cord regularly and replace if damaged. Use only replacement power cords available from Mtops or authorized Mtops product distributors.

Top Plate

- ▷ The top plate may break during use if not properly maintained.
- ▷ Keep the top plate clean. A nonabrasive cleaner may be used to clean the top plate.
- ▷ Inspect the top plate for damage during cleaning.
- ▷ Discontinue product use if the top plate is chipped, etched, or shows excessive scratching.
- ▷ Contact your Labnet Distributor or Labnet Customer Service for top plate replacement.

General

- ▷ It is important to keep this product dry and clean.
- ▷ Remove minor exterior liquid spills promptly.
- ▷ Clean exterior surfaces with a nonabrasive cleaner. Do not clean this product with substances such as alcohol or benzene. (Use neutral detergent.) Do not reconnect product to power input until all cleaned surfaces have dried.

- ▷ If liquid or wet solid material gets inside the product, immediately disconnect power to the product and discontinue use. Contact Labnet for additional instructions regarding interior spills.
- ▷ Do not disassemble, modify, revise or repair this product. This may be a cause a malfunction,electrical fire.
- ▷ We recommend to store the item and its components in its original box, or a similar container that offers adequate protection against damage in transit. Tape the box securely.

Technical Specifications:

TYPE		MS100(HP100)	MS200	MS300HS
		Hot plate	Magnetic Stirrer	Hotplate Stirrer
Temperature	Range	Max. 380℃		Max. 380℃
	Display	Scale(temperature)		Scale(temperature)
	Controller	Analog temperature controller		Analog temperature controller
Watts		680W	15W	695W
Stirring	Speed		100 ~ 1500 rpm	
	Speed display		Scale(rpm)	
	Capacity		up to 5L	
Speed Controller			Feedback control	
Top Plate		Ceramic coated top plate		
Dimensions	Plate area(mm)	180 X 180		
	Overall(WxDxH)	200 X 310 X 107(mm)		
Electrical Supply		AC 120V 50/60Hz or 230V 50/60Hz		

Product Codes :

Product Code	Description
MS300HS	Hot Plate & Magnetic Stirrer, 120V or 230V
MS200	Magnetic Stirrer, 120V or 230V
MS100(HP100)	Hot Plate, 120V or 230V

## EQUIPMENT DISPOSAL

This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste.



Instead it's your responsibility to correctly dispose of your equipment at lifecycle-end by handing it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment.

For more information about where you can drop off your waste equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Thank you

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