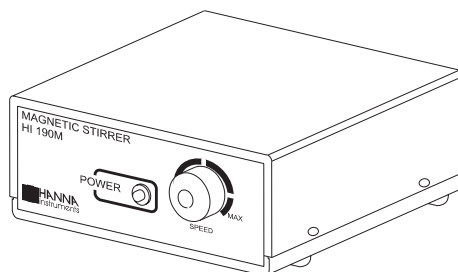


Instruction Manual

HI 190 - HI 200 Magnetic Stirrers



 **HANNA**
instruments

<http://www.hannacan.com>

CE

These Stirrers are in
Compliance with the CE Directives

Dear Customer,

Thank you for choosing a Hanna product. This manual will provide you with the necessary information for the correct operation of the instrument. Please read it carefully before using the device. If you need additional technical information, do not hesitate to e-mail us at techserv@hannacan.com. These instruments are in compliance with **CE** directives EN 50081-1 and EN 50082-1.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Hanna Customer Service Center.

Note: Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned to the Dealer in its original packing.

GENERAL DESCRIPTION

HI 190M, HI 190MB and HI 200M are compact and light-weight magnetic stirrers. They incorporate electronic controls that allow the user to regulate the speed with greater precision. In addition to speed control, a limiter will assure that the maximum speed (1000 rpm) will never be exceeded.

HI 190M and HI 190MB have a plastic cover that will resist the harmful effects of chemicals that are accidentally spilled.

HI 200M is supplied with an AISI 316 stainless steel cover. This model is ideal for applications that create exothermic reactions.

Each stirrer is supplied complete with a 25 mm long (7 mm as diameter), Teflon[®] coated, magnetic stir bar.

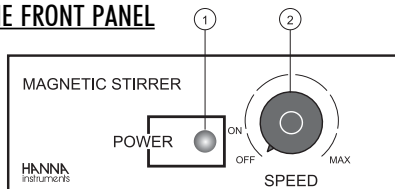
Teflon[®] is registered Trademark of "du Pont de Nemours & Co."

SPECIFICATIONS

	HI 190M	HI190MB	HI 200M
Max Stirring Capacity	1 liter (0.26 gallons)		
Speed Range			
Min.	100 rpm		
Max.	1000 rpm		
Power Supply			
HI 190M/U	110/115V, 50/60 Hz		
HI 190M/D	220/240V, 50/60 Hz		
HI 190MB	12VDC		
HI 200M/U	110/115V, 50/60 Hz		
HI 200M/D	220/240V, 50/60 Hz		
Installation Category	II		
Cover Material			
HI 190M	ABS plastic		
HI 190MB	ABS plastic		
HI 200M	AISI 316 Stainless Steel		
Environment	0 to 50°C (32 to 122°F) Max. 95% RH non-condensing		
Dimensions	120 x 120 x 45 mm (4.8 x 4.8 x 1.8")		
Weight			
HI 190M	640g (1.4 lb)		
HI 190MB	610g (1.3lb)		
HI 200M	710 g (1.6 lb)		

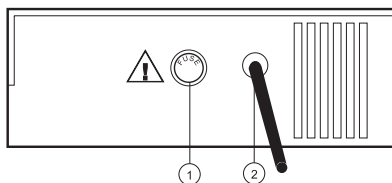
FUNCTIONAL DESCRIPTION

THE FRONT PANEL



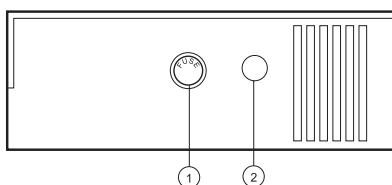
- 1) Power indication (LED lights up when there is power supply)
- 2) Speed knob (for rpm setting with ON/OFF) continuously variable up to the maximum.

THE REAR PANEL OF HI 190M AND HI 200M




- 1) Fuse holder for 200-250V fuse
- 2) AC power cord.

THE REAR PANEL OF HI 190MB

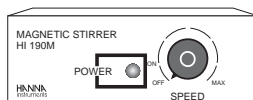


- 1) Fuse holder for 200-250V fuse
- 2) DC power socket (for HI710005 or HI710006)

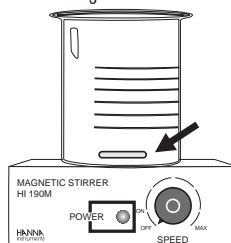
 Unplug the stirrers from the power supply before replacing the fuse.

OPERATIONAL GUIDE

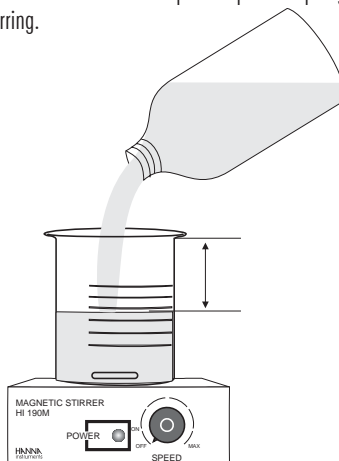
- Make sure that the SPEED knob is in the OFF position.



- Place a beaker or glass container on the top of the stirrer and place the stirring bar at the center of the beaker base.

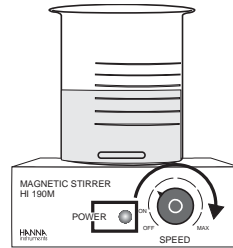


- Pour the liquids to be mixed into the beaker. Do not fill to the brim and leave sufficient space to prevent spillage during stirring.

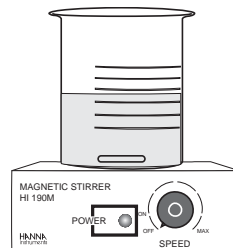


- Connect the power cord to the mains.

- Adjust the **SPEED** knob slowly until the required stirring speed is achieved.



- Allow sufficient time for the mixing operation to attain uniform rotational flow.
- After stirring is completed, turn the **SPEED** knob to **OFF** position.



- If no further stirring is required, disconnect the power supply.

ACCESSORIES

- HI 710005 115VAC to 12VDC power adapter (for HI190MB only)
- HI 731319 Micro stir bar (10 each)

CE DECLARATION OF CONFORMITY



DECLARATION OF CONFORMITY

We
Hanna Instruments Italia Srl
V. E. Fermi, 10
35030 Sarmeola di Rubano - PD
ITALY


herewith certify that the magnetic stirrers

HI 190M HI 190MB HI 200M

have been tested and found to be in compliance with the following regulations:

IEC 801-2	Electrostatic Discharge
IEC 801-3	RF Radiated
IEC 801-4	Fast Transient
EN 55022	Radiated, Class B
EN 61010-1	Electrical Safety

Date of Issue: 27-03-1997


D. Volpato - Engineering Manager
On behalf of
Hanna Instruments S.r.l.

Recommendations for Users

Before using these products, make sure that they are entirely suitable for the environment in which they are used.

Operation of these instruments in residential area could cause unacceptable interferences to radio and TV equipments, requiring the operator to take all necessary steps to correct interferences.

Any variation introduced by the user to the supplied equipment may degrade the instruments' EMC performance.

Unplug the stirrers from the power supply before replacing the fuse.

To avoid damages or burns, do not place these stirrers in microwave ovens.

WARRANTY

All Hanna Instruments **products are warranted for two years** against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. This warranty is limited to repair or replacement free of charge.

Damages due to accident, misuse, tampering or lack of prescribed maintenance are not covered.

If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the failure. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

To validate your warranty, fill out and return the enclosed warranty card within 14 days from the date of purchase.

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Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.