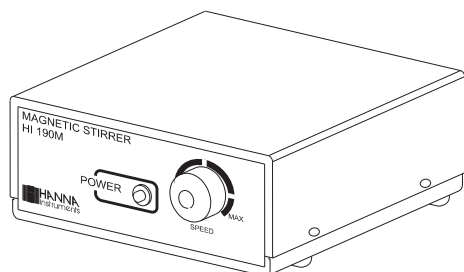


Instruction Manual

HI 190 - HI 200 Magnetic Stirrers



www.hannainst.com

Dear Customer,

Thank you for choosing a Hanna Instruments product. Please read this instruction manual carefully before using these instruments.

If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com or view our worldwide contact list at www.hannainst.com.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully to make sure that no damage has occurred during shipping. If there is any damage, notify your Dealer or the nearest Hanna Customer Service Center.

Note: Save all packing material until you are sure that the instrument functions correctly. All defective items must be returned in the original packing with the supplied accessories.

GENERAL DESCRIPTION

HI 190M, HI 190M-0 and HI 200M are compact and lightweight magnetic stirrers. They incorporate an electronic control that allows the user to regulate the speed with great precision.

HI 190M and HI 190M-0 have a plastic cover that will resist the harmful effects of chemicals that are accidentally spilled.

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

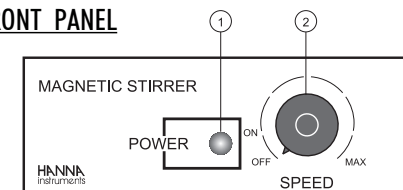
Each stirrer is supplied complete with a PTFE coated magnetic stir bar (L 25 x dia 7 mm).

SPECIFICATIONS

Max Stirring Capacity	1 liter (0.26 gallons)
Speed Range	100 rpm (min) / 1000 rpm (max)
Power Supply	
HI 190M-1	110/115 Vac, 50/60 Hz
HI 190M-2	220/240 Vac, 50/60 Hz
HI 190M-0	12 Vdc
HI 200M-1	110/115 Vac, 50/60 Hz
HI 200M-2	220/240 Vac, 50/60 Hz
Installation Category	II
Cover Material	
HI 190M	ABS plastic
HI 190M-0	ABS plastic
HI 200M	AISI 316 stainless steel
Environment	0 to 50°C (32 to 122°F); RH max 95% non-condensing
Dimensions	120 x 120 x 45 mm (4.8 x 4.8 x 1.8")
Weight	
HI 190M	640 g (1.4 lb.)
HI 190M-0	610 g (1.3 lb.)
HI 200M	710 g (1.6 lb.)

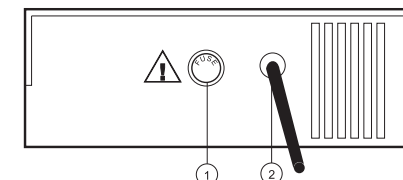
FUNCTIONAL DESCRIPTION

FRONT PANEL



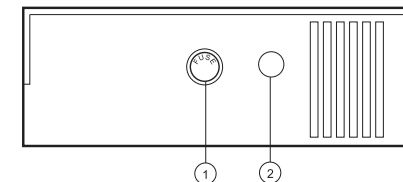
- 1) Power indicator (LED lights up when the stirrer is powered)
- 2) ON/OFF/Speed knob, to turn the stirrer ON and OFF, and set the stirring speed (continuously variable up to the maximum)

REAR PANEL OF HI 190M AND HI 200M



- 1) Fuse holder for 400 mA/250 V fuse
- 2) AC power cord

REAR PANEL OF HI 190M-0

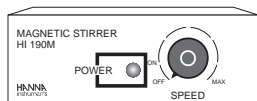


- 1) Fuse holder for 400 mA/250 V fuse
- 2) DC power socket for 12 Vdc adapter

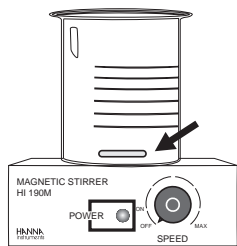
 Always unplug the stirrers before replacing the fuse.

OPERATIONAL GUIDE

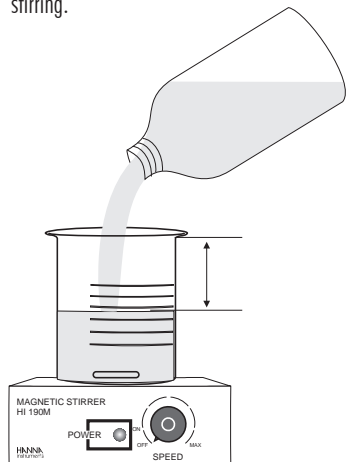
- Make sure that the SPEED knob is in the OFF position.



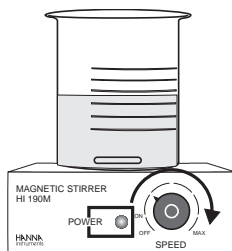
- Place a beaker or glass container on the top of the stirrer and place the stirring bar at the center of the beaker base.



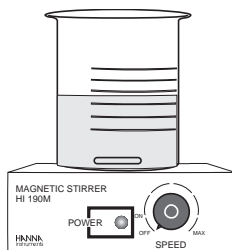
- Pour the liquids to be mixed into the beaker. Do not fill to the brim and leave sufficient space to prevent spillage during stirring.



- 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 115 Vac to 12 Vdc power adapter, US plug
- HI 710006 230 Vac to 12 Vdc power adapter, European plug
- HI 731319 Micro stir bar (10 pcs.)

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

HI 190 and HI 200 are guaranteed 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.

Damage due to accidents, misuse, tampering or lack of prescribed maintenance is 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 problem. 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 Technical Service department and then send it with shipping costs prepaid. When shipping any instrument, make sure it is properly packed for complete protection.

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