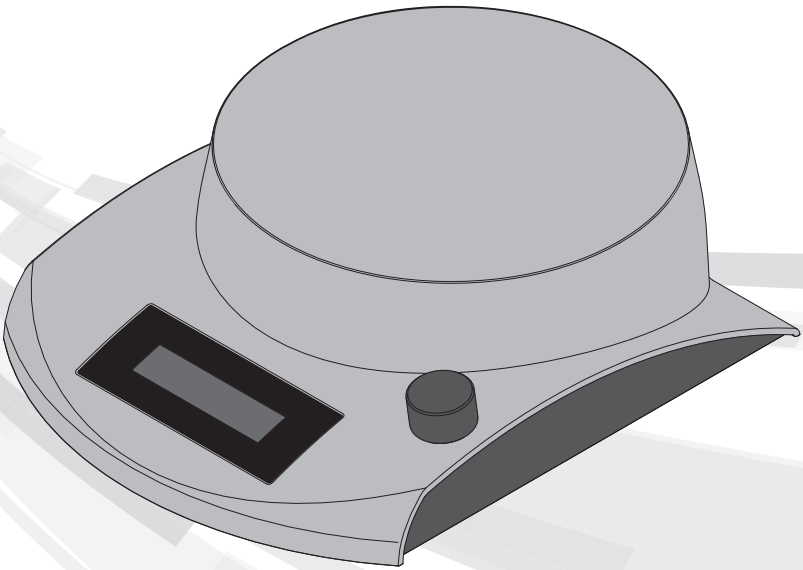




Magnetic Induction Stirrer

Instruction Manual



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Safety Precautions

The Magnetic Induction Stirrer is a solid-state, electromagnetic coil device designed for laboratories in the bioscience, medical, and chemistry fields. This instruction manual cannot address all safety hazards. It is the responsibility of the user to consult and observe all health and safety precautions and to assess the instruments suitability to the task.

Caution!

Before operating the stirrer please read this instruction manual carefully. This manual contains important information, safeguards, and operating instructions.

1. Always inspect the unit for damage (broken or cracked housing and base, loose fasteners, damage from solvents, etc.) before connecting the power cord and before each use. Do not use the unit if any damage is found.
2. Never use this product in any manner inconsistent with these instructions.
3. This product is intended to be only used indoors.
4. This product is intended for stirring aqueous solutions in suitable approved containers.
5. Use only the power adapter delivered with the product, use of other power adapters will void the warranty.
6. Carefully note position of container, efficiency is maximized when container and base are concentric, see molded in concentric circles on top of unit for various container sizes.
7. Observe general laboratory safety precautions and regulations.
8. Do not move the unit while it is operating.
9. Do not immerse the unit in water. Injury due to shock or fire may result.
10. Follow all precautions from the material safety data sheet (MSDS) for any reagents you use with this instrument.
11. Do not mix materials that are explosive.
12. Do not operate in a hazardous or flammable environment.
13. Do not use solvent or flammable liquids near this or other electrical equipment.
14. Do not use any caustic solvents on the unit that may damage the plastic housing.
15. Always work in a safe manner.
16. Opening the instrument housing or improper use of the instrument voids the warranty. If there is a failure during the warranty period, contact Heathrow Scientific® LLC for warranty replacement.
17. Do not attempt to disassemble or modify this product.
18. Store at room temperature in a dry area. Do not expose to sunlight, moisture, or extreme temperatures for prolonged periods of time.

Warning!

If the unit is not used as recommended by the manufacturer, injury may result.

Warning!

Check MSDS, wear required Personal Protective Equipment, and observe all applicable local and national regulations before dispensing and disposing of hazardous samples.

Warning!

Do not use any solvent on the unit that may attack plastic. If hazardous sample material is spilled on the unit and or leaked into the unit, do not run the unit unless it is safe to do so.

Warning!

The laboratory procedure should ensure that no person or hazardous substances are present within a 12" (30 cm) zone around the unit before operating.

Technical Data

Supplied Equipment (part numbers):

- 1 each Stirrer
- 1 each Universal AC power adapter and plugs (120697)
- 1 each Flexible pad (120698)
- 2 each Stir bars, 35 x 12 mm (120672)

Specifications

Environmental Ratings:

Note: For Indoor Use

Altitude: up to 2,000 m

Temperature: 2°C to 40°C

Maximum Relative Humidity: Non-condensing, 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C

Storage Conditions:

Storage temperature: 20°C - 55°C

Relative humidity: ≤ 90% noncondensing

Technical Features:

Capacity: Max liquid volume: 3000 mL (3 liters)

Dimensions (LxWxH):

245 mm x 195 mm x 76 mm

9.6" x 7.6" x 3.0"

Weight:

Approx. 1 lb (0.45 kg) not including power supply

Maximum Speed:

Approx. 2000 rpm

Minimum Speed:

Approx. 50 rpm

Speed Indication on Control Knob:

Located on front of unit centered on control knob

Electrical:

Power Adapter Rating

Input: 100 - 240VAC 50/60Hz 1.0A

Output: 12VDC 2.2A

Device comes with interchangeable plugs for the: UK, Europe, North America, and Australia

Stirrer Rating:

Input: 12VDC

Current (under load): Approx. 1.5A

Power: 18W



This mark is the confirmation that the unit conforms to the EU guidelines and has been tested according to the following EU Declaration of Conformity.



710213

Conforms to:

ANSI/UL Std.61010-1

IEC/EN 61010-1

CAN/CSA C22.2 No. 61010-1

ANSI/UL Std.61010-2-051

IEC 61010-2-051

CAN/CSA C22.2 No. 61010-2-051



This product has been tested to the requirements of CAN/CSA C22.2 No. 61010-1 third edition, including Amendment 1, or a later version of the same standard incorporating the same level of testing requirements.

EC Declaration of Conformity

Manufacturer: Heathrow Scientific® LLC
Address: 620 Lakeview Parkway • Vernon Hills, IL 60061 USA
European Contact: Emergo, Europe
Prinsessegracht 20 • 2514 AP The Hague • The Netherlands

Model: Magnetic Induction Stirrer, Catalog # 120584, 120585
This unit has been constructed and conforms to the following:
Safety Standards:

IEC/EN 61010-1:2010 ed. 3 + c1, c2
ANSI/UL 61010-1:2012 ed. 3 (R2016)
CAN/CSA C22.2 No. 61010-1-12 (R2017)
IEC 61010-2-051: ed. 3
ANSI/UL 61010-2-051 ed. 3 (R2016)
CAN/CSA C22.2 No. 61010-2-051

EMC Standards:

IEC 61326-1:2012 (EN 61326 1:2013)
FCC Part 15, Subpart B: 2015
ICES-003, Issue 6

2012/19/EU (WEEE)
2011/65/EU RoHS2

Signed:



Gary Kamees,
Vice President of Product Development/Manufacturing
620 Lakeview Parkway • Vernon Hills, IL, 60061 USA
May 2018

Disposal Responsibilities

The equipment you purchased may contain hazardous substances that could impact the environment. Per regulations on electronic devices in the European Community, you must use the appropriate disposal systems to avoid exposure of these substances to the environment. The disposal systems will reuse or recycle hazardous materials from your equipment responsibly.

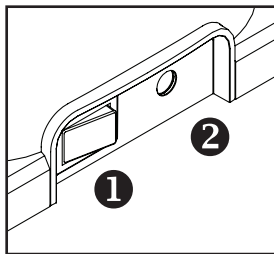
The crossed-out wheeled bin symbol invites you to use those systems.



If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration. You can also contact us for more information on the environmental performance of our products.

Operation

1. Remove the contents from the package, examining them carefully for breakage, defects, or missing parts. Save the packaging.
Note: Specially designed stir bars are included. Optimal geometry provides quiet and efficient stirring.
2. Positioning: place stirrer on a sturdy, stable, level surface near a grounded electrical outlet away from the edge of the counter and other moving equipment. The surface should be clean. Position stirrer so that it is easy to disconnect from mains outlet. Allow sufficient clearance on all sides of the unit for proper ventilation and usage. Ensure no person or hazardous substances are within 12" (30 cm) zone around unit. Make sure the power cord is clear of hot surfaces and other hazards.
3. Prior to every use, inspect unit for cracks, missing pieces, or any damage that would result in impaired performance and notify manufacturer BEFORE use. Make sure the power switch on the rear of the unit is set to "O" which stands for "OFF"
4. Place flexible pad on top of stirrer to keep container in place and to dampen noise.
5. Place stir bar into bottom of empty container (see warning on page 8).
6. Carefully fill container with all fluids to be mixed, note the level of the liquid which will rise to accommodate the spinning vortex of fluid when unit is powered. Be sure to leave sufficient room at the container top for this rise in fluid level.
7. Center the mixing container on top of the stirrer. When turned on, the magnet will find center.
8. Turn on unit with rear power button.
Note: To reset device, press and hold knob for 3 seconds.



1. Main On/Off Switch
2. Power Input Connector

Operating Modes

Continuous Spinning

9. Press knob to start unit.
10. Turn knob to left to view “Single” mode for single direction spinning. Press knob to select this mode.
11. Turn knob clockwise to view “Clockwise” or to counter clockwise to view “C. Clockwise”. Press knob to select stir bar rotation direction.
12. Turn knob to desired speed setting. Press knob to select rpm.
13. Turn knob to right to view “Continuous” mode for untimed spinning. Press knob to start spinning.

Note: When adjusting speed while unit is running, the display will show the set speed. Once set, the display will show the ramping speed until the stir speed is reached.

Note: If the speed adjustment is done rapidly, the stir bar may uncouple and jump around erratically. Press the knob to stop, move the container to recouple stir bar, and ramp up the speed slowly.

Note: Settings are retained for next use when power is turned off.

14. Press knob to turn off spinning before removing mixing container.
Note: To cancel set program, press and hold knob for 3 seconds.

Timed Spinning

9. Press knob to start unit.
10. Turn knob to left to view “Single” mode for single direction spinning. Press knob to select this mode.
11. Turn knob clockwise to view “Clockwise” or to counter clockwise to view “C. Clockwise”. Press knob to select stir bar rotation direction.
12. Turn knob to desired speed setting. Press knob to select rpm.
13. Turn knob to right to view “Timeout” mode for timed spinning. Press knob to select timed spinning.

14. Turn knob to desired time setting (00:30 to 60:00). Press knob to start spinning. Time display will count down to 00:00.

Note: When adjusting speed while unit is running, the display will show the set speed. Once set, the display will show the ramping speed until the stir speed is reached.

Note: If the speed adjustment is done rapidly, the stir bar may uncouple and jump around erratically. Press the knob to stop, move the container to recouple stir bar, and ramp up the speed slowly.

Note: Settings are retained for next use when power is turned off.

15. Once time is reached, stirring will stop. Then you can remove the mixing container.
Note: To cancel set program, press and hold knob for 3 seconds.

Alternating Timed Mixing

9. Press knob to start unit.
10. Turn knob to right to view “Reverse” mode for multi-direction spinning. Press knob to select this mode.
11. Turn knob to desired speed setting. Press knob to select rpm.
12. Turn knob to select reverse time (00:30 to 60:00) to set time cycle for spinning direction. Press knob to select time cycle.
13. Turn knob to desired number of cycles (01 to 99).
14. Press knob to start spin cycling.
Note: When adjusting speed while unit is running, the display will show the set speed. Once set, the display will show the ramping speed until the stir speed is reached.
Note: If the speed adjustment is done rapidly, the stir bar may uncouple and jump around erratically. Press the knob to stop, move the container to recouple stir bar, and ramp up the speed slowly.
Note: Settings are retained for next use when power is turned off.
15. Once cycles are complete, stirring will stop. Then you can remove the mixing container.
Note: To cancel set program, press and hold knob for 3 seconds.

Warning!

Do not drop stir bars into empty glass containers as the container may break.

Warning!

Do not plug other power adaptors into stirrer unit, this will void the warranty.

Warning!

Do not use if cord or power supply is damaged.

Warning!

Do not quickly turn speed knob as the liquid may spill out of container.

Maintenance

The Magnetic Induction Stirrer is a maintenance free product. Clean unit only when it not plugged into an electrical outlet. When necessary, the complete outside of the unit can be wiped down using a damp cloth and a mild, pH neutral detergent. Do not immerse the unit or the power adapter.

Warning!

Do not use any solvent on the unit that may attack plastic or cause cracks in the unit or the flexible pad. Avoid exposure to UV radiation, either natural or man-made. In addition to cracks; discoloration, softening, or crazing of the plastic materials can occur. Corrosion can also occur to the metal parts which are part of the assembly. This damage can weaken them. Ensure the unit is protected from corrosion and mechanical damage. The unit must be cleaned with a pH neutral cleaning liquid.

Trouble Shooting

Trouble	Possible Cause	Solution
Stir bar is not rotating	<ul style="list-style-type: none">– Not properly plugged in– Unit turned off– Speed setting too low	<ul style="list-style-type: none">– Verify unit is plugged in– Turn unit on– Turn speed up
Magnet jumping around erratically	<ul style="list-style-type: none">– Magnet has not coupled correctly with stir bar– Stir bar may be wrong size– Stir bar may have low magnetic strength	<ul style="list-style-type: none">– Turn off stirrer, move container to recouple stir bar, turn on stirrer, and ramp speed slowly– Optimal length for this stirrer is 35 - 40mm– Always use Alnico or rare earth stir bars
Container moves/slides on unit	<ul style="list-style-type: none">– Flexible pad for top of unit is missing– Bottom of container or top of device is wet	<ul style="list-style-type: none">– Place flexible pad on top of device to help prevent container movement– Remove container and dry off bottom of container and top of unit

Return for Repair

Important:

Transporting hazardous materials without a permit is a violation of federal law.

Heathrow Scientific LLC will not accept any return that has not been appropriately cleaned and decontaminated.

In the unlikely event of return, or when damage to the unit necessitates return, contact Heathrow Scientific LLC and obtain return authorization before sending your stirrer for service. Product must be decontaminated before transport.

Warranty

IN NO EVENT WILL HEATHROW SCIENTIFIC® LLC'S OBLIGATION UNDER THIS WARRANTY EXCEED THE PRICE OF THE PRODUCT.

Limited Warranty

Heathrow Scientific LLC warrants that the Magnetic Induction Stirrer will be free from defects in workmanship and materials for five years from the date of purchase.

If you believe that there is a defect in the product, you must, during the warranty period, notify Heathrow Scientific LLC, provide proof of purchase, and return the product to Heathrow Scientific LLC with a Return Authorization form. To obtain a Return Authorization form, please call 1-847-816-5070. If Heathrow Scientific LLC is properly notified and, after inspection, confirms that there is a defect and the warranty period has not expired, Heathrow Scientific LLC will repair, modify, or replace the product, at its sole option, at no charge.

OTHER THAN THIS LIMITED WARRANTY, HEATHROW SCIENTIFIC LLC MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE QUALITY OR PERFORMANCE OF THE PRODUCT, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHICH ARE HEREBY DISCLAIMED AND EXCLUDED. HEATHROW SCIENTIFIC LLC WILL IN NO EVENT BE LIABLE FOR ANY LOSS OF USE, LOSS OF PROFITS, CONSEQUENTIAL, SPECIAL, EXEMPLARY OR PUNITIVE DAMAGES.

THIS WARRANTY DOES NOT COVER:

- ANY DEFECT OR DAMAGE CAUSED BY IMPROPER OR UNREASONABLE USE OF THE PRODUCT. (THE MINI- CENTRIFUGE IS DESIGNED FOR USE ONLY BY TRAINED LABORATORY TECHNICIANS. USE BY ANYONE ELSE WILL VOID THIS WARRANTY.)
- ANY PRODUCT THAT HAS BEEN, IN HEATHROW SCIENTIFIC® LLC'S SOLE JUDGEMENT, TAMPERED WITH, ALTERED, OR REPAIRED BY ANYONE OTHER THAN HEATHROW SCIENTIFIC® LLC.
- ANY PRODUCT THAT IS INOPERATIVE BECAUSE OF: (a) WEAR OCCASIONED BY USE, (b) NEGLIGENCE, (c) ACCIDENT, (d) INCORRECT MAINTENANCE, OR (e) USE UNDER ABNORMAL CONDITIONS OF TEMPERATURE, DIRT OR CORROSION, OR USE WITH ABRASIVE OR CORROSIVE MATERIALS.
- ACCESSORY PARTS, SUCH AS RUBBER AND PLASTIC PARTS THAT ARE DAMAGED BY LIQUIDS OR MISUSE.