FOUR E'S SCIENTIFIC

Operating Instructions

5 Inch LED Digital Magnetic Stirrer

MI0102011



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Safety Instructions

For your protection

- **Read the operating instructions in full before starting up and follow the safety instructions.**
- Keep the operating instructions in a place where they can be accessed by everyone.
- Ensure that only trained staff work with the appliance.
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.
- **Caution-Magnetism!** Effects of the magnetic field have to be taken in to account (e.g. data storage media, cardiac pacemakers…).
- Wear your personal protective equipment in accordance with the hazard category of the media to be processed. Otherwise there is a risk from:
  - Splashing and evaporation of liquids
  - Ejection of parts
  - Release of toxic or combustible gases



- Use only the AC adapter supplied
- Set up the appliance in a spacious area on an even, stable, clean, non-slip, dry and fireproof surface.
- The base plate must be clean and intact.
- Check the appliance and accessories before hand for damage each time you use them. Do not use damaged components.
- Reduce the speed if
  - The medium splashes out of the vessel because the speed is too high
  - The appliance is not running smoothly
  - The container moves on the base plate
- Beware of hazards due to:
  - Flammable materials

- Combustible media with a low boiling temperature

Incorrect container size

-Overfilling of media

- Unsafe condition of container.

• The appliance may overheat when in use.
• Process pathogenic materials only in closed vessels under a suitable extractor hood. Please contact us if you have questions.
• Do not operate the appliance in explosive atmospheres, with hazardous substances or under water.
• Only process media that will not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways, e.g. through light irradiation.
• Safe operation is only guaranteed with the accessories described in the “Delivery Scope” chapter.
• The centre of gravity of the assembly must lie within the surface on which it is set up.
• The appliance must only be disconnected from the mains supply by pulling out the plug-in power supply unit.
• Abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on.
• When using the PTFE-coated magnetic bars, the following has to be noted: chemical reactions of PTFE occur in contact with molten or dissolved alkaline and alkaline-earth metals, as well as with fine particle powders of metals of the 2. and 3. group of the periodical system at temperatures above 300-400°C . Only elementary fluorine, chlorine trifluoride and alkaline metals do attack PTFE, halogen hydrocarbons have a reversible swelling effect.
• To the protection of the equipment
Caution: Equipment may not be poured over with aggressive media! Equipment never under water set!
• The voltage stated on the nameplate must correspond to the mains voltage.
• Do not cover the device, even partially e.g. with metallic plates

or film. This results in overheating.
• Protect the appliance and accessories from bumps and impacts.
• Ensure that the base plate is kept clean.

Unpacking

• Please unpack the device carefully and check it for damage.
• Delivery Scope

Item	Qty.
Magnetic Stirrer	1
Power adapter	1
Stirring bar	1
Operating instruction	1

Correct Use

• Use
- For mixing liquids
• Range of use
- Laboratories - Schools - Pharmacies

Operator's Control



Fig 1

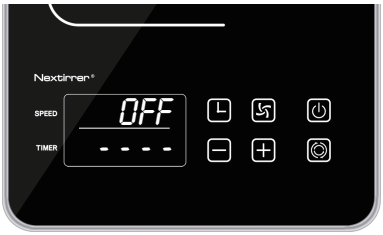

Fig 2

- Start/Stop: Connect the appliance to a socket (the voltages stated on the nameplates must correspond to the mains voltage). When powered on and the unit is in standby, speed displays “OFF” and the time displays “---” (shown as Fig 2). Press Start/Stop to start the unit, speed displays the actual speed (Factory set speed or the last set speed); time displays the actual time (Factory set speed or the last set time)
- Display: When setting and standby, both the set speed and time are displayed; when working, both the actual speed and the rest of the countdown are displayed.
- Speed setting: when standby, press the touch key to activate the speed setting and the speed display will start to flash; then press the “+” or “-” to set the speed. 5 seconds later, it will stop flashing and the setting is completed. The speed can be set when working.
- Time setting: when standby, press the touch key to activate the time setting and the time display will start to flash; then press the “+” or “-” to set the speed. 5 seconds later, it will stop flashing and the setting is completed. The time can be set when working.
- Reverse mode setting: when standby, press the touch key to start the reverse rotation and the light indicator will be red. Press again, the reverse rotation will stop and the light indicator will be off. When reverse rotation, the rotation will reversed every 30 seconds, such from clockwise to anticlockwise.

Maintenance and Cleaning

The appliance is subject only to the natural wear and tear of components and their statistical failure rate. Use only cleansing agents which have been approved by us to clean our devices.

Dyes	Isopropyl alcohol
Constructions materials	Water containing tenside / isopropyl alcohol
Cosmetics	Water containing tenside / isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

For materials which are not listed, please request information from us. Wear the proper protective gloves during cleaning of the devices. Electrical devices may not be placed in the cleansing agent for the purpose of cleaning. Before using another then the recommended method for cleaning or decontamination, the user must ascertain with the manufacturer that this method does not destroy the instrument.

Warranty

You have purchased an original laboratory machine which meets the highest engineering and quality standards. In accordance with our guarantee conditions, the guarantee period is 24 months . For claims under the guarantee please contact your local dealer. You may also send the machine directly to our works, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs.

Technical Data

Model	MI0102011
Dimensions [W x D x H mm]	247x 172 x 30
Set-up plate dimensions [mm]	128*128
Set-up plate material	Tempered glass
Stirring Mechanism	Electromagnetism drive
Speed range [rpm]	50- 1500
Max. Stirring bar [mm]	40
Max. Stirring quantity [H2O, mL]	1800mL at 1500rpm
	2500mL at 1300rpm
	3000mL at 1100rpm
Speed display	LED
Time display	LED
Permissible ambient temperature [°C]	5 - 40
Permissible relative humidity	80%
DIN EN 60529 Protection class	IP52
Voltage [VAC]	100-240
Input voltage [VDC]	24
Frequency [Hz]	50/60
Power [W]	10
Weight [kg]	1.6 kg