

Product Manual

Magnetic Stirrer Ultra-Thin, Motorless

Code 663-577

PLEASE READ THESE INSTRUCTIONS BEFORE USE.

1. Product Description

1.1 Introduction

Westlab's Magnetic Stirrer is a slim and compact electromagnetic unit designed with modern magnetic coil technology. With an IP 65 protection class and the stirrer's motorless design, the unit offers a quality performance without the need for maintenance.

The stirrer includes a speed range from 15 to 1500 RPM in steps of 50 RPM and a timer mode of one to 99 minutes or infinite mode. In addition, the pulse mode allows a stirrer bar to rotate clockwise and anticlockwise every 30 seconds complete and efficient mixing of the solution.

The stirrer's microprocessor control enables quick and easy programming in addition to its enhanced performance and efficiency. For added efficiency, the last run feature allows for the restored program to resume operation after a power failure.

1.2 Intended Use

Applications include dissolving solids in liquids, stirring of volatile solutions, as well as other general microbiology and biochemistry applications that require light agitation or vigorous convulsing. Ideal for use in laboratories, pharmacies, and schools.

1.3 Features

- Brushless DC Motor
- Digital Display, Microprocessor Control
- Slim Profile, Unique Flat Surface Design
- Variable Speed from 15 to 1500 RPM, Steps of 50 RPM
- IP 65 Protection Class, Water Spill Resistant Design
- Timer from 1 to 99 Minutes or Infinite Mode
- Software Driven Gradual Acceleration
- Maximum Stirring Capacity of 800ml
- Anti-Skid Pads

1.4 Accessories

- High strength PTFE magnetic stirrer bar, 25 x 8mm, x 1
- Power adaptor:
 - Input voltage: 100-240 VAC 50/60 Hz,
 - Output voltage: 9VDC ∓ 1A

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2. Technical Specifications

Motor Type	Brushless DC motor
Capacity	800ml maximum
Digital Display	Yes
Stirring Positions	Single
Stirrer Bar Length	25mm recommended
Speed Setting	15 to 1500 RPM, steps of 50 RPM
Timer Setting	1 to 99 minutes or infinite mode
Capacity max.	800ml
Last Run Memory	Yes
Pulse Mode	30 seconds alternating stirring direction cycles
Set Up Plate Material	Stainless steel
Protection Class	IP 65 compliant design, water spill resistant
Input Voltage	100-240 VAC 50/60 Hz
Output Voltage	9VDC \pm 1A
Unit Dimensions	156mm W x 110mm D x 13.2mm H
Unit Weight	400g

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3. Safety Precautions

Read the following safety precautions prior to using the stirrer. Never use the unit in any manner not specified in this manual.

- Wear personal protective equipment during the operation of the unit.
- Always install the unit on a flat, stable, and non-slippery surface.
- Always unplug the power adaptor before cleaning the unit.
- Never touch moving parts. Do not move the unit during operation.
- The unit is not to be operated in a hazardous, explosive, or flammable environment and not to be used to mix explosive or highly reactive material. Do not use the unit under water.
- Do not use the stirrer if it shows signs of electrical or mechanical damage. If any damage is found, contact your supplier immediately.
- Ensure that the attachments are secured properly prior to operation.
- Do not touch the base plate immediately after operation. The base plate may get warm after continuous usage.
- Process pathogenic materials only in a closed vessel under a suitable extractor hood. Do not operate the unit in explosive atmospheres, with hazardous substances or under water.
- Only use liquid for mixing 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., Light irradiation, surrounding temperature etc.
- Abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on.
- A chemical reaction with the PTFE can occur when in contact with molten or dissolved alkaline earth metals, as well as with fine powders of metals from the second and third group of the periodical table at temperatures above 300°C to 400°C. Only elementary fluorine, chlorine trifluoride and alkaline metals do attack PTFE. Halogen hydrocarbons have a reversible swelling effect.
- The temperature of the stirring media in the beaker and beaker itself should not be more than 45°C.
- The equipment will not restart in the case of power supply interruption or in the case of any fault or mechanical interruption. Care should be taken based on the sample used for mixing.
- Do not lift or hold the device by the power cable.
- Do not use damaged beaker, flask, stirring bar or any other component for operation. It may affect the efficiency of the device.
- Do not place any steel or magnetic material on the base plate except the recommended magnetic stirring bar with a beaker or flask in between. Doing this can affect the magnetism of the device.
- Do not try to mix liquid volumes of more than 800ml with 25mm magnetic stirring bars. It may lead to improper mixing.

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Reduce the speed:

- If the medium splashes out of the vessel
- If the appliance is not running smoothly
- If the container moves on the base plate

The safety of the user cannot be guaranteed if the unit:

- Is operated with accessories that are not supplied with the unit
- Is operated with accessories that are not supplied or recommended by the manufacturer
- Is operated improperly or contrary to the manufacturer's specifications

4. Maintenance & Cleaning

- Before cleaning the unit, unplug the power adaptor from the mains and allow the stirrer to reach room temperature.
- Wear protective gloves and safety glasses while cleaning the unit.
- Excessive amounts of liquid should be avoided. Liquids must not contact the motor.
- The base plate must be cleaned before re-use. Use a soft cloth to clean.
- Use isopropyl alcohol to clean the housing from dyes, building materials or cosmetic materials.
- Be careful that no liquid enters the device during cleaning.
- After cleaning, ensure that all the parts are dried.
- If repairs are performed by unauthorised personnel, the product warranty may become void.

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5. Installation

1. Open the packaging and gently remove the stirrer from the box.
2. Place the unit gently onto a firm and levelled surface.
3. Unpack every individual component.
4. Assemble the components as instructed in this manual for optimal performance.

ATTENTION: The manual should be kept with the device and all the packaging should be kept in safe storage for at least two years for warranty purposes.






Location and mounting

Place the magnetic stirrer on a flat, solid, and levelled surface. Ensure that all four feet stand on the surface firmly. Avoid installing on a slippery surface or a bench prone to vibration.

- The ideal ambient temperature is $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$. Do not place the unit in direct sunlight.
- Keep a minimum clearance of 300mm from all directions to guarantee safe operation.
- Keep the unit away from heat or water to avoid sample temperature errors.
- Do not place the stirrer in an area that makes it difficult to operate the unit.

6. Operation

User interface and display

Buttons	Name	Function
	Start/Stop	Press the Start/Stop button to turn the device ON and OFF.
	Speed/Time	Single press the Speed/Time button to toggle between the time and speed settings.
	Increment	Press the increment button to increase the speed or time values.
	Decrement	Press the decrement button to decrease the speed or time values.
	Pulse & LED	Single press the pulse button to activate pulse mode. The LED will blink when the mode has been activated. Press the pulse button again to stop the pulse operation.

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1. Connect the AC power adaptor to the main power supply.
2. Fill the beaker, flask, or vessel with the medium or liquids to be processed and then place the magnetic stirring bar in the beaker, flask, or vessel.
3. Place the beaker, flask, or vessel on the center of the base plate.
4. Press the ON/OFF button to turn on the electromagnetic stirrer.
5. Set the speed at which the medium or liquids need to be processed. The minimum speed is 15 RPM and maximum speed is 1500 RPM.
6. Set the time if required. By default, the time is set as infinite.

Setting the speed value

1. Single press the 'Speed/Time' button.
2. Single press the increment and decrement buttons to set the speed value in steps of 50 RPM. Long press the increment or decrement buttons to increase or decrease the speed value at a faster pace.
3. The speed value will be shown on the digital display and blink three times.
4. At any time, the user can modify the speed using increment or decrement buttons.
5. On every restart, the stirrer will start with the last run speed.

Setting the time value

The default timer is set as infinite when the stirrer starts. To set time, complete the following:

1. Press the 'Pulse/Time' button to activate the time mode. By default, the timer will be set as infinite and will be shown as '∞' on the display panel.
2. Once activated, single press the increment or decrement buttons to increase or decrease the time value by one minute on each press. Long press the increment or decrement buttons to increase or decrease time value at a faster pace.
3. After modifying, wait for three blinks to set the time value.
4. The speed can be modified at any point after the time has been set. The speed and time values are both independent factors, hence the modified speed will not affect the set time. The set speed and time will be displayed alternatively when the speed reaches the set RPM.
5. When the timer reaches zero (0), the stirring stops. The display will show '00' & '0000' indicating the time for stirring is over.
6. Press any button except the power button to start the stirring operation with the last run speed and time.

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Setting the pulse mode

In pulse mode, the stirring direction will be reversed every 30 seconds.

1. To select the pulse mode, single press the pulse button.
2. Set the required speed and then single press the pulse button to start the stirring process in pulse mode. The LED adjacent to the pulse button will blink to indicate activation of the pulse mode.

Example: The RPM is set as 2200 and operational time of 35 minutes. After activating the pulse mode, press the start button to initiate stirring. For 30 seconds, the stirring will be in a clockwise direction followed by a five second pause before stirring in an anti-clockwise direction for 30 seconds.

3. Press the ON/OFF button again to stop the ongoing operation and to switch the stirrer off.
4. After every restart, the stirrer will start operating at the last run speed and infinite time.

NOTE: In case of slippage, first turn OFF and turn ON again. If slippage occurs, then reduce the speed for efficient operation.

8. Product Recycling

In the case that the product is to be disposed of, the relevant legal regulations are to be observed.



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