REVOLVE

RV-MS-15

USER MANUAL

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1. PRODUCT DESCRIPTION

This magnetic stirrer is a slim & compact electromagnetic stirrer designed with modern magnetic coil technology. It provides high IP protection class (IP 65) without any moving parts attached to it. Setting of speed and time is simple and easy with a digital display. For better mixing, pulse mode is provided in which a stirring bar can rotate clockwise & counter clockwise for every 30 seconds.

2. INTENDED USE

This magnetic stirrer is designed for use in laboratories, pharmacies & schools for mixing liquids industry for mixing liquids.

3. FEATURES

1. Slim profile with a unique flat surface design.
2. Wear-free drive without any moving parts.
3. Mixing capacity of 800 mL with 25mm magnetic stirring bar.
4. Pulse function of 30 seconds for better mixing.
5. Variable time setting from 1 minute to 99 minute & infinite mode.
6. Digital display for accurate setting of speed & time.
7. Variable speed setting from 15 to 1500 RPM.
8. Water spill resistant design
9. Manufactured to IP 65 standard.
10. Easy to use control panel with a user friendly interface.
11. Anti - Skid pads.

4. ACCESSORIES

Stirrer Bar (PTFE coated, 25 x 8mm high strength stir bar)

5. TECHNICAL SPECIFICATIONS

Stirring Quantity Max. Per Stirring Position (H2O)	800 ml
Number of Stirring Position	1
Speed Range	15 - 1500 RPM
Time Range	1 to 99 minute & infinite mode
Auto Direction Change/Pulse Mode	Yes
Auto Direction Change Time Interval	30 seconds
Digital Display	Yes
Recommended Bar Length	25 mm
Set-up Plate Material	Stainless Steel
Set-up Plate Dimensions	Ø94 mm
Dimensions (L x W x H)	191 x 124 x 16.5 mm
Protection Class According to DIN EN 60529	IP 65
Permissible Ambient Temperature	5 - 40°C
Weight	0.4 - 0.5 Kg
Permissible Relative Humidity	≤80%
Power Adapter Detail	Input: 100-240VAC, 50/60Hz Output: 9V ⎓ 1A
Power Consumption	5W
Altitude	Use upto an altitude of 2000 m above MSL
Pollution Degree	2
Environment	For indoor use only

6. SAFETY PRECAUTIONS

Read all safety & usage information provided in this manual carefully before using the device.

1. 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.
2. Place the device on a flat, stable, clean, non-slippery and fire-proof surface.
3. The base plate must be cleaned before re-use. Use a soft cloth to clean.
4. Do not try to mix liquid more that 800 ml with 25 mm magnetic stirring bar. It may lead to improper mixing.
5. Wear protective equipment in accordance with the hazardous 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.
6. Do not lift or hold the device from the power cable.
7. Do not use a damaged beaker, flask, stirring bar or any other component for operation. It may affect the efficiency of the device.
8. 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.

9. Wear protective gloves while cleaning the device.
10. Do not touch the base plate immediately after operation. The base plate may get warm after continuous usage.
11. Process pathogenic materials only in a closed vessel under a suitable extractor hood. Do not operate the appliance in explosive atmospheres, with hazardous substances or under water.
12. 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. Examples include : Light irradiation, surrounding temperature etc.
13. Abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on.
14. Chemical reaction of PTFE can occur when in contact with molten or dissolved alkaline earth metals, as well as with fine powders of metals from the 2^{nd} and 3^{rd} group of the period table at temperatures above 300-400 °C. Only elementary fluorine, chorine trifluoride and alkaline metals do attack PTFE. Halogen hydrocarbons have a reversible swelling effect.
15. The temperature of the stirring media in the beaker and beaker itself should not be more than 45° C.
16. The equipment will not restart, both in case of power supply interruption and in the case of any fault or mechanical interruption. Care should be taken based on the sample used for mixing.

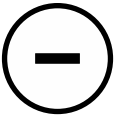
7. MAINTENANCE & CLEANING

- Plug off the Machine while cleaning
- Wear protective gloves while cleaning the machine
- Wipe the exterior of machine with a Damp cloth

8. INSTALLATION & OPERATION

This magnetic stirrer is provided in a packaged box. Open the box, remove the packaging and gently place the device on the firm and leveled surface. Take care while unpacking and do not pull the AC power adaptor as it is attached with the device. The user manual should be kept near the device. Please keep all packaging in safe storage for at least one year for warranty purpose.

Below table shows the function of user interface buttons.

Buttons	Buttons Name	Function
	ON/OFF	Press button to turn ON and turn OFF the unit.
	Pulse & Time	Single press button to activate pulse mode. LED blinks to indicate. Long press button to activate time mode. “t” will show on display.
	Increment	Press button to increase speed/time value.
	Decrement	Press button to decrease speed/time value.

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 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. Turn on the electromagnetic stirrer by pressing ON/OFF button.
5. Set the speed at which the medium or liquids need to be processed. Minimum speed is 15 RPM and maximum speed is 1500 RPM.
6. Set the time if required. Minimum time is 1 minute & maximum time is 99 minutes. By default time is always infinite.

SPEED SETTING

- Press increment (+) & decrement (-) button to modify & set speed value.
- Single press increment (+) or decrement (-) button to increase or decrease the speed value by 50 RPM on each press.
- Continuous press increment (+) or decrement (-) button to increase or decrease the speed value at a faster pace.
- Speed value is seen in the digital display and is set after 3 blinks.
- At any point of time, users can modify the speed using increment (+) or decrement (-) button.
- On every restart, the stirrer will start with the last run speed.

TIME SETTING

The default timer is set as infinite when the stirrer starts. In order to set time, do the following :

- Long press the “PULSE/TIME” button to activate time mode. By default the timer will be infinite and will be seen as “t ∞” in display.
- Once activated, single press increment (+) or decrement (-) button to increase or decrease time value by 1 minute on each press.
- Once activated, continuous press increment (+) or decrement (-) button to increase or decrease time value as faster pace.
- After modifying, wait for 3 blinks to set time. Timer is countdown timer and it will take effect once it reaches set RPM.
- Speed can be modified at any point after you have set the time. Speed and time are both independent factors, hence the modified speed will not affect the set time. The set speed and time will be displayed alternatively when speed reaches the set RPM.
- When the timer goes to zero (0), the stirring stops. The display will show “t 00" & “0000" indicating time for stirring is over.
- Press any button except the power button to start the stirring operation with the last run speed and time.

Note: Timer will be set to default (infinite) once the magnetic stirrer is restarted.

PULSE MODE

In pulse mode, the stirring direction will be reversed every 30 seconds. In order to select the pulse mode single press the pulse button.

First set the required speed & then single press the pulse button to start the stirring process in pulse mode. LED adjacent to pulse button will blink to indicate activation of the pulse mode.

You can also set a time for Pulse Mode. To do so, set speed and also time, then single press the pulse button to start stirring in pulse mode. Pulse stirring mode ends when time goes to zero (0).

Press the ON/OFF button again to stop the ongoing operation as well as to switch the electromagnetic stirrer off.

After every restart (ON/OFF), the stirrer will start operating at the last run speed & infinite time.

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

9. WARRANTY STATEMENT

This products is warranted to be free from defects in material and workmanship for a period of one (1) year from date of purchase. Your product will be duly repaired upon prompt notification in compliance with the following conditions :

- This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.

- The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the products or damages caused by its use. The customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested the products must be returned to the distributor in well packed and insured manner and all shipping charges must be paid.

Note: Some states do not allow limitation on the length of implied warranties or the

exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.

- The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.

10. PRODUCT DISPOSAL

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

Information on the disposal of electrical and electronics devices in the European Community.

The disposal of electrical devices is regulated within the European Community by national regulations based on EU Directive 2012/19/EU on waste electrical and electronics equipment (WEEE). According to these regulations, any devices supplied after 13.06.05 in the business to business sphere, to which this product is assigned, may no longer be disposed off in municipal or domestic waste. They are marked with the following symbol to indicate this.

As disposal regulations within the EU may vary from country to country please contact your supplier if necessary.

For your reference, make a note of the serial number, date of purchase and supplier here.	
Serial No.	Purchase Date
Supplier	

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