VELP Scientifica AREC

VELP Scientifica AREC Digital Heating Magnetic Stirrer User Manual

Model: AREC | Voltage: 115V/60Hz

1. Introduction

This manual provides essential information for the safe and effective operation, installation, and maintenance of your VELP Scientifica AREC Digital Heating Magnetic Stirrer. Please read this manual thoroughly before using the instrument to ensure proper function and to prevent potential hazards.

2. Safety Information

Adherence to the following safety precautions is crucial for user safety and to prevent damage to the instrument.

- **Electrical Safety:** Ensure the instrument is connected to a properly grounded power outlet with the specified voltage (115V/60Hz). Do not operate with damaged power cords.
- **Thermal Hazards:** The heating plate can reach temperatures up to 550 °C. Always use appropriate personal protective equipment (PPE), such as heat-resistant gloves. The 'Hot Surface Safety' message will display when the plate temperature exceeds 50 °C.
- **Chemical Resistance:** The ceramic top and technopolymer structure offer high resistance to chemicals. However, avoid spilling corrosive or flammable liquids directly onto the control panel or into the internal components.
- **Stable Placement:** Position the stirrer on a stable, level, and heat-resistant surface to prevent tipping or spillage.
- **Ventilation:** Ensure adequate ventilation around the unit to dissipate heat.
- **Supervision:** Do not leave the instrument unattended during operation, especially when heating or stirring hazardous materials.

3. Product Overview

The VELP Scientifica AREC is a digital heating magnetic stirrer designed for laboratory applications requiring precise temperature control and efficient stirring. It features a ceramic heating plate, digital display, and intuitive control knobs.



Figure 3.1: Front view of the AREC stirrer with a beaker containing blue liquid, demonstrating stirring action.



Figure 3.2: Detailed view of the control panel, showing the digital display for temperature and the two control knobs for heating and stirring speed.



Figure 3.3: Rear view of the AREC stirrer, highlighting the power input port and main power switch.



Figure 3.4: Side profile of the AREC stirrer, illustrating its compact design.



Figure 3.5: Overhead view of the AREC stirrer with a beaker on the ceramic plate, showing the vortex created by stirring.

4. Setup

1. **Unpacking:** Carefully remove the stirrer from its packaging. Retain packaging materials for future transport or storage.
2. **Placement:** Place the unit on a clean, dry, stable, and level laboratory bench, away from flammable materials and direct heat sources. Ensure sufficient space for ventilation.
3. **Power Connection:** Connect the power cord to the rear of the instrument, then plug it into a grounded 115V/60Hz electrical outlet.
4. **Initial Inspection:** Before first use, inspect the unit for any visible damage. Do not operate if damage is observed.

5. Operating Instructions

5.1 Powering On/Off

Locate the main power switch at the rear of the unit. Flip the switch to the 'I' position to power on and 'O' to power off.

5.2 Setting Stirring Speed

1. Place a suitable magnetic stir bar into your vessel containing the liquid to be stirred.
2. Place the vessel centrally on the ceramic heating plate.
3. Turn the right knob, labeled 'Speed rpm', clockwise to increase the stirring speed from 50 to 1500 rpm. Turn counter-clockwise to decrease.
4. Observe the stirring action and adjust the speed as needed for optimal mixing without splashing.

5.3 Setting Heating Temperature

1. Turn the left knob, labeled 'Temp °C', clockwise to increase the setpoint temperature up to 550 °C. Turn counter-clockwise to decrease.
2. The digital display will show the actual temperature of the heating plate and the setpoint temperature.
3. Allow time for the plate to reach the desired temperature. The 'Hot Surface Safety' warning will illuminate if the plate temperature is above 50 °C, even after heating is turned off.

5.4 Digital Display

The bright digital display provides real-time feedback on the heating plate's actual temperature and the user-defined setpoint temperature, ensuring precise control over your experiments.

5.5 Run-off Grove

The integrated run-off grove is designed to protect the internal electronics from accidental liquid spills, directing them away from sensitive components.

6. Maintenance and Cleaning

Regular maintenance ensures the longevity and optimal performance of your AREC stirrer.

- **Cleaning:** Always disconnect the unit from the power supply and allow the heating plate to cool completely before cleaning. Use a soft, damp cloth with a mild detergent to clean the ceramic top and technopolymer structure. Avoid abrasive cleaners or solvents that could damage the surfaces.
- **Spills:** In case of spills, immediately clean the affected area. The run-off grove helps protect electronics, but prompt cleaning is essential.
- **Inspection:** Periodically inspect the power cord for any signs of wear or damage.



Figure 6.1: Demonstrating the cleaning process for the AREC stirrer's ceramic plate and control panel.

7. Troubleshooting

If you encounter issues, refer to the following common troubleshooting steps:

- **Unit does not power on:** Check if the power cord is securely connected to both the unit and the electrical outlet. Ensure the main power switch is in the 'I' position. Verify the outlet is functional.
- **Stirring not working:** Ensure the stirring speed knob is turned up. Check if the magnetic stir bar is present in the vessel and is compatible with the stirrer's magnetic field.
- **Heating not working:** Ensure the heating temperature knob is set above the ambient temperature. Allow sufficient time for the plate to heat up.
- **Inaccurate temperature reading:** Ensure the temperature probe (if external) is correctly positioned in the medium. For plate temperature, ensure the vessel has good contact with the ceramic surface.

For persistent issues or complex problems, please contact VELP Scientifica customer support.

8. Specifications

Feature	Specification
Model	AREC
Voltage	115V/60Hz
Heating Plate Temperature Range	Room Temperature to 550 °C
Stirring Speed Range	50 to 1500 rpm
Max. Stirring Volume (H_2O)	15 L
Heating Plate Material	Ceramic

Feature	Specification
Structure Material	Technopolymer
Dimensions (L x W x H)	13 x 8 x 3.7 inches
Weight	7.7 Pounds

9. Warranty and Support

VELP Scientifica products are manufactured to high-quality standards and are covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the documentation included with your purchase or visit the official VELP Scientifica website.

For technical assistance, spare parts, or service inquiries, please contact VELP Scientifica customer support. You can find contact information on the VELP Scientifica Store on Amazon or their official website.

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