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- › [FOUR E'S SCIENTIFIC 7 Inch Hotplate Magnetic Stirrer with Stand User Manual](#)

## FOUR E'S SCIENTIFIC MI0102002-14

# FOUR E'S SCIENTIFIC 7 Inch Hotplate Magnetic Stirrer User Manual

Model: MI0102002-14

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of the FOUR E'S SCIENTIFIC 7 Inch Hotplate Magnetic Stirrer. Please read this manual thoroughly before operating the device.



Figure 1: FOUR E'S SCIENTIFIC 7 Inch Hotplate Magnetic Stirrer setup.

## 2. SAFETY PRECAUTIONS

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Always observe the following safety precautions to prevent injury and damage to the equipment:

- Ensure the power supply matches the device's requirements.
- Do not operate the hotplate stirrer in explosive atmospheres.
- Always wear appropriate personal protective equipment (PPE), such as safety glasses and gloves.
- Avoid touching the hotplate surface during and immediately after operation, as it can reach high temperatures.
- Place the device on a stable, level, and heat-resistant surface.
- Do not immerse the device in water or other liquids.
- Disconnect the power cord before cleaning or maintenance.
- Keep the work area clean and free of clutter.
- Use only recommended accessories and spare parts.

### 3. PRODUCT OVERVIEW AND COMPONENTS

The FOUR E'S SCIENTIFIC 7 Inch Hotplate Magnetic Stirrer is designed for efficient heating and mixing of liquids in laboratory settings. Key components include:

- **Stainless Steel Ceramic Coated Hot Plate:** Provides immediate heat transfer and corrosion resistance.
- **LED Display:** Intuitive display for speed, timing, and temperature.
- **3D Knob Design:** For simpler and faster adjustment of speed and temperature.
- **Aluminum Alloy Casing:** Offers corrosion and high-temperature resistance.
- **PT1000 Temperature Sensor:** External probe for accurate temperature measurement.
- **Support Stand:** For holding external temperature probes or other apparatus.



Figure 2: Detailed view of the hotplate stirrer's main features.



Figure 3: Support stand components and their dimensions.

## 4. SETUP AND INSTALLATION

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1. **Unpacking:** Carefully remove the hotplate stirrer and all accessories from the packaging. Inspect for any damage during transit.
2. **Placement:** Place the unit on a stable, level, and non-flammable surface in a well-ventilated area. Ensure adequate clearance around the unit for heat dissipation.
3. **Power Connection:** Connect the power cord to the unit and then to a grounded electrical outlet. Verify that the power supply matches the voltage requirements specified on the device label.
4. **Installing the Support Stand (Optional):**
  - Screw the longer rod into the threaded hole at the back of the unit.
  - Attach the clamp to the rod at the desired height.
  - Insert the shorter rod into the clamp and secure it.
  - The stand can be used to hold the external temperature probe or other laboratory apparatus.

5. **Connecting the PT1000 Temperature Sensor:** Insert the PT1000 temperature probe into the designated port on the back of the unit (next to the switch button). Place the probe into the liquid to be heated for accurate temperature control.

## 5. OPERATING INSTRUCTIONS

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This section details the steps for operating the hotplate magnetic stirrer.

### 5.1 Basic Operation

1. **Power On:** Flip the main power switch located on the back of the unit to the "ON" position. The LED display will illuminate.
2. **Place Vessel:** Place the beaker or flask containing the liquid and a magnetic stir bar onto the center of the hotplate surface.
3. **Set Stirring Speed:**
  - Rotate the right 3D knob (labeled "SPEED") to adjust the stirring speed. The speed range is 50-1500 RPM.
  - The current stirring speed will be displayed on the LED screen.
4. **Set Heating Temperature:**
  - Rotate the left 3D knob (labeled "TEMP") to set the desired heating temperature. The temperature range is Room Temperature (RT) to 510°C.
  - The set temperature will be displayed on the LED screen.
  - If the external PT1000 probe is connected, the unit will control the temperature based on the probe's reading.
5. **Start/Stop Operation:**
  - Press the "START/STOP" button (often integrated into the knobs or a separate button) to begin heating and stirring.
  - Press it again to stop the operation.

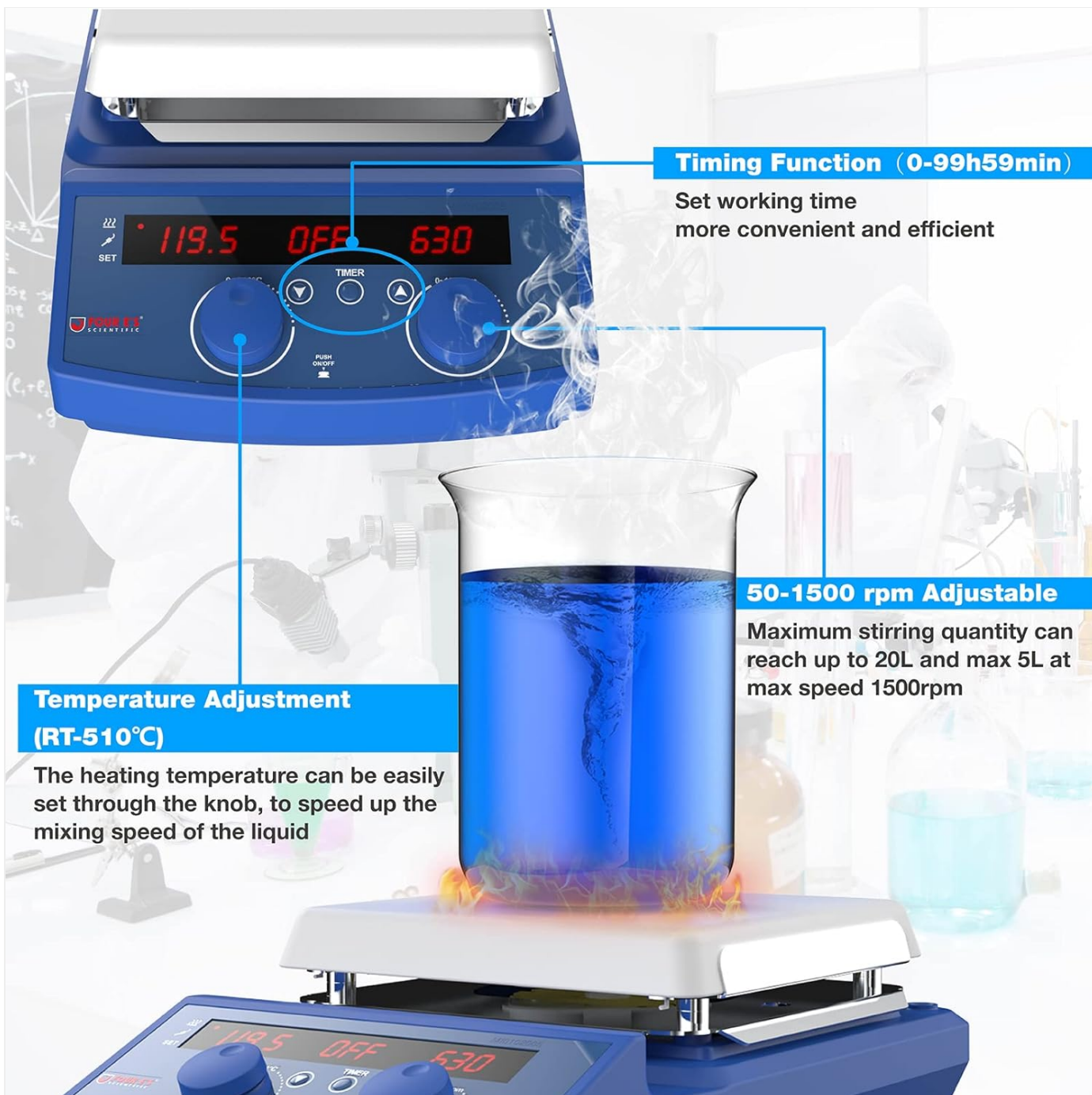


Figure 4: Control panel and operation overview.

## 5.2 Timing Function

The unit features a timing function for controlled operation (0-99 hours 59 minutes).

1. While setting the temperature or speed, use the "TIMER" button or integrated timing function on the display to set the desired operation duration.
2. Once the set time elapses, the heating and stirring functions will automatically stop.

## 5.3 Safety Temperature Setting

The device includes a safety temperature setting to prevent overheating (50-550°C).

- This setting acts as an independent safety circuit. If the hotplate surface temperature exceeds this set safety limit, the heating will automatically shut off.
- Adjust this setting via the dedicated safety temperature adjustment plug, typically located near the main power switch.

## 6. MAINTENANCE

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Proper maintenance ensures the longevity and optimal performance of your hotplate magnetic stirrer.

- **Cleaning:**

- Always disconnect the power cord before cleaning.
- Clean the hotplate surface with a soft cloth and mild detergent. Avoid abrasive cleaners.
- Wipe down the casing with a damp cloth. Do not allow liquids to enter the unit.
- Ensure the unit is completely dry before reconnecting power.

- **Inspection:**

- Regularly inspect the power cord for any signs of damage.
- Check the hotplate surface for cracks or damage.
- Ensure all knobs and buttons function correctly.

- **Storage:** Store the unit in a clean, dry place away from direct sunlight and extreme temperatures when not in use.

## 7. TROUBLESHOOTING

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This section provides solutions to common issues you may encounter.

Problem	Possible Cause	Solution
Unit does not power on.	No power supply; Power cord loose; Main switch off.	Check power outlet; Ensure power cord is securely connected; Turn main switch to "ON".
Stirring not working.	Stir bar not present or too large; Viscosity of liquid too high; Speed set too low.	Ensure stir bar is in vessel; Use appropriate stir bar size; Reduce liquid viscosity if possible; Increase stirring speed.
Heating not working.	Temperature set too low; External probe not connected or faulty; Safety temperature limit reached.	Increase set temperature; Check external probe connection; Verify safety temperature setting.
Inaccurate temperature reading.	External probe not properly immersed or faulty.	Ensure probe is fully immersed and clean; Replace probe if necessary.

If the problem persists after attempting these solutions, please contact customer support.

## 8. SPECIFICATIONS

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Technical specifications for the FOUR E'S SCIENTIFIC 7 Inch Hotplate Magnetic Stirrer (Model: MI0102002-14):

- **Model Number:** MI0102002-14
- **Hotplate Dimensions:** 7 inches (approx.)
- **Stirring Speed Range:** 50-1500 RPM
- **Heating Temperature Range:** RT (Room Temperature) - 510°C (950°F)
- **Heating Output:** 1050W
- **Max Stirring Capacity:** 20 Liters

- **Temperature Display Accuracy:**  $\pm 0.1^{\circ}\text{C}$
- **Safety Temperature:**  $50\text{-}550^{\circ}\text{C}$
- **Timing Range:** 0-99 hours 59 minutes
- **Product Dimensions:** 4.21 x 5.75 x 6.54 inches
- **Product Weight:** 7.72 Pounds
- **Manufacturer:** FOUR E'S SCIENTIFIC



Figure 5: Key operational specifications.

## 9. APPLICATIONS

The FOUR E'S SCIENTIFIC Hotplate Magnetic Stirrer is suitable for a wide range of applications, including but not limited to:

- Laboratory research and experiments
- Educational institutions

- DIY or at-home liquid mixing
- Cosmetics research
- Agricultural research
- Medical and pharmaceutical applications

**Note:** This device is not suitable for high viscosity solutions.

# MULTIPLE APPLICATIONS

**Laboratory**

**DIY or at-home Liquid Mixing**

**Educational Institutions**

**Cosmetics Research**

**Agricultural Research**

**Medical Medicine**

**⚠ TIP: NOT suitable for high viscosity solutions.**

Figure 6: Diverse applications of the hotplate magnetic stirrer.

## 10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the contact details provided by FOUR E'S SCIENTIFIC. Keep your purchase receipt for warranty claims.

**Manufacturer:** FOUR E'S SCIENTIFIC

For further assistance, visit the official FOUR E'S SCIENTIFIC store or contact their customer service.

