ATO 100ml

ATO Heating Mantle with Magnetic Stirrer User Manual

Model: 100ml

Introduction

This manual provides detailed instructions for the safe and efficient operation of your ATO Heating Mantle with Magnetic Stirrer. This device is designed for laboratory use, combining heating and magnetic stirring functions for various liquid applications. It features an alkali-free glass fiber inner mantle, ensuring corrosion resistance and durability, along with electronic temperature control and adjustable stirring speed.

Safety Precautions

- Always operate the heating mantle on a stable, heat-resistant surface.
- Ensure proper ventilation to prevent accumulation of hazardous fumes.
- Do not operate the unit with flammable liquids or in explosive atmospheres.
- Avoid direct contact with the heating surface during and immediately after operation. Use appropriate personal protective equipment (PPE) such as heat-resistant gloves.
- Do not immerse the unit in water or other liquids.
- Disconnect the power supply before cleaning or maintenance.
- Ensure the glassware used is heat-resistant and free of cracks or damage.
- Never leave the heating mantle unattended during operation, especially when heating liquids.

Product Overview

The ATO Heating Mantle with Magnetic Stirrer integrates heating and stirring capabilities into a single compact unit. Below are the key components and controls:

Image: Front view of the ATO Heating Mantle with Magnetic Stirrer, showing its compact design and control panel.

Image: Detailed view of the heating mantle's control panel, highlighting the temperature knob, stirring knob, heating indicator light, and stirring indicator light.

- **Temperature Knob:** Used to adjust the heating temperature.
- **Stirring Knob:** Used to adjust the magnetic stirring speed.
- **HEAT Indicator Light:** Illuminates when the heating element is active.
- **STIR Indicator Light:** Illuminates when the stirring function is active.
- **Heating Mantle:** The hemispherical heating element designed for round-bottom flasks.

Setup

1. **Unpacking:** Carefully remove the heating mantle from its packaging. Inspect for any signs of damage during transit.
2. **Placement:** Place the unit on a stable, level, and heat-resistant workbench or surface, away from flammable materials. Ensure adequate clearance around the unit for ventilation.
3. **Power Connection:** Connect the power cord to a grounded electrical outlet with the correct voltage as specified in

the product specifications.

4. **Glassware Placement:** Place the appropriate size round-bottom flask into the heating mantle. Ensure the flask fits snugly but without excessive force.
5. **Stir Bar Insertion:** If using the stirring function, carefully drop a magnetic stir bar into the liquid within the flask.

Operating Instructions

Heating Function

1. Ensure the unit is properly set up and connected to power.
2. Place the flask containing the liquid to be heated into the mantle.
3. Turn the **Temperature Knob** clockwise to the desired heating level. The HEAT indicator light will illuminate.
4. Monitor the temperature of the liquid using an external thermometer if precise temperature control is required.
5. To stop heating, turn the **Temperature Knob** counter-clockwise to the "OFF" position. The HEAT indicator light will turn off.
6. Allow the mantle to cool down completely before handling or storing.

Magnetic Stirring Function

1. Ensure a magnetic stir bar is present in the liquid within the flask.
2. Turn the **Stirring Knob** clockwise to initiate stirring. The STIR indicator light will illuminate.
3. Continue turning the knob clockwise to increase the stirring speed.
4. Adjust the speed as needed to achieve uniform mixing without splashing.
5. To stop stirring, turn the **Stirring Knob** counter-clockwise to the "OFF" position. The STIR indicator light will turn off.

Combined Heating and Stirring

Both functions can be operated simultaneously. Adjust the temperature and stirring speed independently using their respective knobs.

Maintenance

- **Cleaning:** Disconnect the power cord before cleaning. Wipe the exterior surfaces with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure no liquid enters the internal components.
- **Storage:** Store the heating mantle in a dry, clean environment when not in use.
- **Inspection:** Regularly inspect the power cord for any signs of damage. Check the heating mantle for cracks or wear. If any damage is observed, discontinue use and contact customer support.

Troubleshooting

Problem	Possible Cause	Solution
Unit does not power on.	No power supply; faulty power cord; internal fuse blown.	Check power outlet and connection. Inspect power cord for damage. Contact customer support if issue persists.

Problem	Possible Cause	Solution
Heating element not working.	Temperature knob set to "OFF"; internal heating element failure.	Ensure temperature knob is turned on. Contact customer support.
Stirring function not working.	Stirring knob set to "OFF"; stir bar not present or stuck; internal motor failure.	Ensure stirring knob is turned on. Check for presence and free movement of stir bar. Contact customer support.
Inconsistent heating or stirring.	Unstable power supply; unit overheating; internal component issue.	Ensure stable power. Allow unit to cool if it feels excessively hot. Contact customer support.

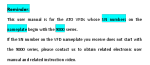
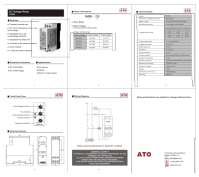
Specifications

Feature	Detail
Brand	ATO
Model	100ml Heating Mantle with Magnetic Stirrer
Capacity	100ml (other capacities available: 500ml, 1000ml, 2000ml)
Heating Element	Alkali-free glass fiber
Temperature Control	Electronic, knob adjustable
Stirring Speed Control	Knob adjustable
Manufacturer	ATO
First Available Date	August 1, 2020

Warranty and Support

For warranty information or technical support, please contact ATO customer service. Refer to your purchase documentation for specific warranty terms. For general inquiries, you may visit the ATO Store on Amazon.
Return Policy: This product typically has a 30-day return/replacement policy from the date of purchase. Please refer to your retailer's specific return policy.

Related Documents - 100ml

	[ATO Digital Crane Scale User Manual | ATO-CRS-50T] Comprehensive user manual for the ATO Digital Crane Scale (Model ATO-CRS-50T), covering features, specifications, operation, calibration, and troubleshooting. Includes details on GSP911-30 and GSP911-50 models.
	[ATO Grating Spectrophotometer Operation Manual] This operation manual provides detailed instructions for the ATO Grating Spectrophotometer, covering interface description, calibration, measurement procedures, data management, system settings, and technical specifications for accurate color analysis.
	[Industrial Noise Sensor (Analog Type) User Manual - SN-ZS-BZ-V03] User manual for the ATO Industrial Noise Sensor (Analog Type), model SN-ZS-BZ-V03. Details product overview, features, main parameters, system framework, hardware connection, and output signal conversion.
	[ATO GK3000 Variable Frequency Drive User Manual: Installation, Operation & Maintenance Guide] Comprehensive user manual for the ATO GK3000 Variable Frequency Drive (VFD). Covers installation, operation, parameter settings, fault diagnosis, and maintenance for industrial applications. Features sensorless vector control, RS485 communication, PID control, and multi-speed operation.
	[ATO DVRD DC Voltage Monitoring Relay: Features, Specs & Wiring] Detailed specifications and features for the ATO DVRD DC Voltage Monitoring Relay. This document outlines technical data, voltage setting ranges, protective functions, applications, front panel view, wiring diagram, and safety guidelines for the DVRD series relays.
	[ATO VFD Quick Setup and Application Guide] A comprehensive guide to setting up and applying ATO Variable Frequency Drives (VFDs), covering quick setup, parameter configurations, and various control modes including panel control, three-wire system, external control, multi-stage operation, and constant pressure water supply systems.