Stuart SSM1/120V/60

Stuart SSM1/120V/60 Mini Orbital Shaker User Manual

Model: SSM1/120V/60

Your guide to safe and efficient operation

1. Introduction and Product Overview

The Stuart SSM1/120V/60 Mini Orbital Shaker is a compact laboratory instrument designed for gentle to vigorous mixing of samples. It provides a smooth, uniform circular motion with an orbit of 16mm, making it ideal for various applications in scientific research and diagnostics.
This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your SSM1/120V/60 Mini Orbital Shaker. Please read it thoroughly before operating the device.
Key Features:

- Benchtop orbital shaker with variable speed range of 30 to 300rpm for gentle to vigorous mixing with a smooth, continuous circular motion.
- Platform holds petri dishes, staining trays, multiwell plates, or Erlenmeyer flasks with a total weight of 3kg.
- Rotary dial and digital readout of speed and time with continuous or timed operations from 1 to 999 minutes.
- Orbital motion range of 16mm to ensure even mixing.
- Rubber mat provides a nonslip surface for the platform.

2. Safety Information

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

- Ensure the shaker is placed on a stable, level surface away from direct sunlight, excessive heat, or vibrations.
- Connect the unit only to a grounded power outlet with the correct voltage (120V, 50/60Hz).
- Do not operate the shaker with a damaged power cord or plug.
- Avoid spilling liquids on the unit. In case of spillage, disconnect power immediately and clean thoroughly.
- Do not exceed the maximum load capacity of 3kg.
- Ensure all vessels are securely placed on the platform or within the accessory cradle system before starting operation.

- Do not touch moving parts during operation.
- Disconnect the power supply before cleaning or performing any maintenance.
- This equipment is designed for laboratory use. Do not use it for purposes other than its intended use.

3. Setup

1. **Unpacking:** Carefully remove the shaker from its packaging. Inspect for any signs of damage during transit. Retain packaging for future transport or storage.
2. **Placement:** Place the shaker on a firm, level, and stable benchtop. Ensure there is adequate space around the unit for ventilation and safe operation. The unit can be used in incubators and environmental chambers (up to 40°C and 80% humidity).
3. **Power Connection:** Connect the power cord to the shaker's power inlet and then to a suitable grounded electrical outlet (120V, 50/60Hz).
4. **Platform Setup:**
    - The unit is supplied with a non-slip mat for direct placement of multi-well plates, diagnostic cards, petri dishes, or small beakers.
    - Alternatively, an accessory cradle system (sold separately) can be attached to accommodate a variety of vessels including flasks, bottles, or larger beakers via four rubber securing bars. This system can hold up to: 4 x 250ml, 2 x 500ml, or 1 x 1000ml Erlenmeyer flasks or bottles.

Figure 1: Stuart SSM1 Mini Orbital Shaker with two small beakers on the non-slip mat, demonstrating typical setup for smaller vessels.

Figure 2: Stuart SSM1 Mini Orbital Shaker configured with multi-well plates and petri dishes on the non-slip mat, suitable for small volume samples.

4. Operating Instructions

1. **Loading Samples:**
    - Place your samples (e.g., multi-well plates, dishes, petri dishes, flasks) securely on the non-slip mat or within the accessory cradle system. Ensure the total weight does not exceed 3kg.
    - For optimal performance and stability, distribute the load evenly on the platform.
2. **Power On:** Turn on the main power switch, usually located at the back or side of the unit. The digital display will illuminate.
3. **Setting Speed:**
    - Use the rotary dial to adjust the shaking speed. The speed range is from 30 to 300 rpm.
    - The current speed will be displayed on the digital readout. Once set, the shaking speed is effectively maintained even over long periods.

4. **Setting Timer (Optional):**
    - The built-in digital timer allows you to set shaking times from 1 to 999 minutes.
    - Refer to the specific button (e.g., "mins" or "time") on the control panel to adjust the timer.
    - If no timer is set, the unit will operate continuously.
5. **Starting Operation:** Press the "start/stop" button to begin the shaking motion.
6. **Stopping Operation:** Press the "start/stop" button again to pause or stop the shaking motion. The unit will come to a gentle stop.

Figure 3: Stuart SSM1 Mini Orbital Shaker with an accessory cradle system holding multiple Erlenmeyer flasks, demonstrating capacity for larger vessels.

Figure 4: Stuart SSM1 Mini Orbital Shaker with four 250ml Erlenmeyer flasks secured in the accessory cradle system, illustrating a common setup for medium-sized flasks.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your Stuart SSM1/120V/60 Mini Orbital Shaker.

- **Cleaning:**
  - Always disconnect the unit from the power supply before cleaning.
  - Wipe the exterior surfaces with a damp cloth and a mild detergent. Do not use abrasive cleaners or solvents.
  - Ensure no liquid enters the internal components of the shaker.
  - The non-slip mat can be removed and cleaned separately with soap and water. Ensure it is completely dry before re-placing it on the platform.
- **Inspection:** Periodically inspect the power cord for any signs of damage. Check the stability of the platform

and the condition of the rubber mat.

- **Storage:** If storing the unit for an extended period, ensure it is clean, dry, and stored in a cool, dry place, preferably in its original packaging.

6. Troubleshooting

This section provides solutions to common issues you might encounter with your Mini Orbital Shaker. If the problem persists, contact your supplier or the manufacturer.

Problem	Possible Cause	Solution
Unit does not power on.	No power supply; power cord damaged; power switch off.	Check power connection and outlet; inspect power cord; ensure power switch is ON.
Shaker not moving or moving erratically.	Overload; platform obstructed; internal malfunction.	Reduce load; check for obstructions; if problem persists, contact service.
Speed display is incorrect or fluctuating.	Sensor issue; internal electronics.	Ensure stable power supply; if problem persists, contact service.
Excessive noise or vibration.	Uneven load; unstable surface; worn internal components.	Distribute load evenly; place on stable surface; if noise persists, contact service.

7. Specifications

Specification	Value
Model Number	SSM1/120V/60
Brand	Stuart
Manufacturer	Bibby Scientific
Power Supply	120V, 50/60Hz, 50 Watts
Speed Range	30 to 300 rpm
Orbit	16mm
Maximum Load Capacity	3kg
Timer	1 to 999 minutes or continuous operation
Operating Temperature Range	Up to 40°C (in incubators/environmental chambers)
Operating Humidity Range	Up to 80% (in incubators/environmental chambers)
Package Dimensions	16 x 14 x 10 inches
Item Weight	14.04 Pounds

8. Warranty and Support

For warranty information, technical support, or service inquiries regarding your Stuart SSM1/120V/60 Mini Orbital Shaker, please contact your original supplier or the manufacturer, Bibby Scientific. Ensure you have your model number and purchase date available when contacting support.
For further assistance, you may refer to the official Stuart website or contact their customer service department.