



Benchtop Shaker

Operation Manual

(Please read the instruction carefully before you use the machine)

Contents

I. Preface	1
II. Safety Instructions	1
III. Application Range:	2
IV. Product Overview	3
V. Operation Instructions	8
VI. Troubleshooting	9
VII. Maintenance and Cleaning	9

I. Preface

Welcome to the "Shaker" manual. Please read this manual thoroughly before using the instrument, follow the instructions provided, and understand the safety precautions. For assistance during installation or use, contact our after-sales service department promptly. We continuously innovate and update our products, though minor changes may occur without notification. Please keep this manual for future reference.

II. Safety Instructions

Warning

Prior to using the instrument, carefully review this manual and strictly adhere to the safety instructions provided. This instrument should only be operated by trained personnel.

Safety Ground Protection

Ensure the power socket is properly grounded to guarantee safety before using the instrument.

Precautions

When working, wear appropriate personal protective clothing to prevent potential hazards such as:

- 1) Splashing of shaking liquids;
- 2) Mechanical vibrations that may break glass containers;
- 3) Involvement of body parts, hair, clothing, and jewelry.

Operate the instrument following safety precautions and occupational guidelines to avoid accidents. Avoid contact with moving parts, and prevent hair or clothing from getting caught. Take care not to crush fingers when handling the instrument.

Use the instrument in a well-ventilated, spacious area with a stable, clean, dry, flame-retardant, and friction-resistant workbench. Do not operate outdoors, in hazardous material environments, or in water.

When adjusting the instrument speed, ensure containers on the shaker plate are secure to prevent sample spillage. Reduce motor speed if the instrument operates unevenly. Handling flammable samples can be hazardous; use only non-reactive samples during shaking.

Only trained professionals should open the instrument; always unplug the power before doing so. Ensure the operating voltage specified on the nameplate matches the mains supply voltage.

Do not cover the instrument during use to prevent damage. Avoid using the instrument in areas with strong magnetic fields.

III. Application Range

This instrument is designed for use in schools, laboratories, and factories to shake and mix liquids. This instrument is not intended for residential use. It can be equipped with various accessories suitable for different test tube sizes. Failure to use manufacturer-recommended accessories or follow instructions may create unsafe conditions.

IV. Product Overview

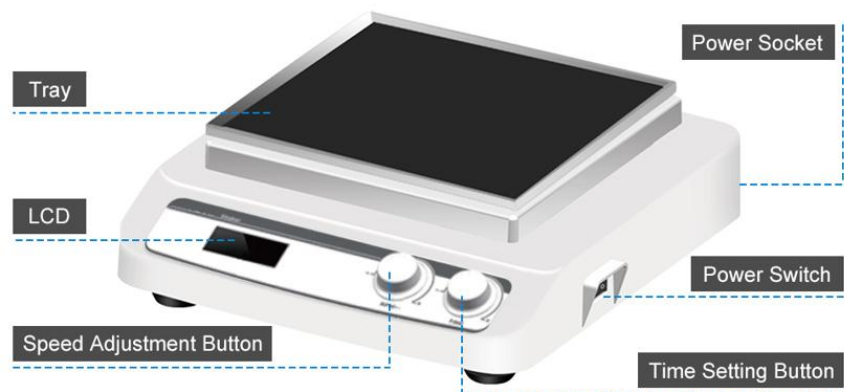
The multi-function shaker integrates brushless DC motor and microcomputer control technology, featuring an intuitive knob operation mode. It facilitates mixing and culturing of various common flasks, petri dishes, and beakers, making it ideal for applications in biotechnology, microbiology, medical analysis, as well as colloid coloration or decolorization and combinatorial chemistry.

1. Features

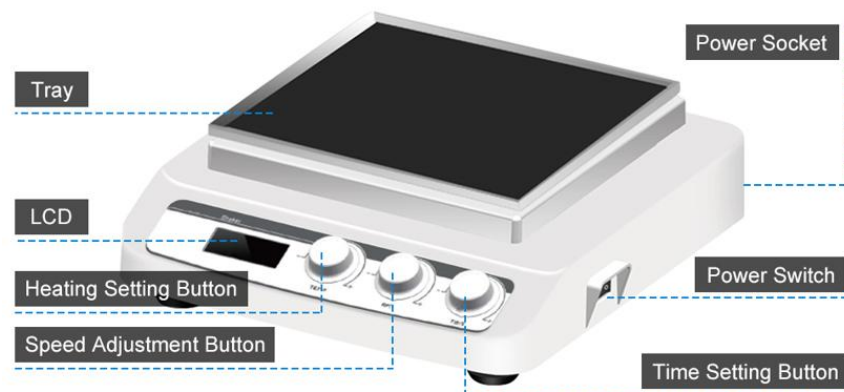
- 1) A large-screen LCD displays settings for time, rotation speed, and temperature, with a user-friendly interface.
- 2) Locked operation mode prevents inadvertent operation errors.
- 3) Utilizes a brushless DC motor for low noise, precise speed control, long lifespan, and maintenance-free operation.
- 4) Convenient accessory replacement enhances work efficiency significantly.
- 5) Soft start and uniform acceleration prevent sample splashing effectively.
- 6) Optional RS232 interface allows connection to a computer for parameter setting and real-time display of operational curves.
- 7) The heating series offers rapid heating, a wide temperature range, and can achieve temperatures exceeding 100°C, addressing the limitation of conventional shakers operating at high temperatures.

2. Schematic Diagram

Shaker Without Heating



Shaker With Heating



Optional trays
(only the universal tray is available for the decolorizing shaker)



universal tray



fixed tray



adjustable tray



Double layer
universal tray



flask tray



spring tray



flask tray



Double-layer
fixed tray

Decolorizing Shaker



Rocker Shaker



3D Shaker



Orbital Shaker



3. Technical Parameters

1) Multi functional shaker parameters (table-1)

Amplitude (MM)	4	4(heat)	20	8	8(heat)
Voltage (V)	100~240	100~240	100~240	100~240	100~240
Frequency (HZ)	50~60	50~60	50~60	50~60	50~60
Shaking Mode	Orbital	Orbital	Orbital	Orbital	Orbital
Motor Type	DC brushless motor		Brushless motor	DC brushless motor	
Motor Input Power (W)	35	35	36	35	35
Motor Output Power (W)	25	25	/	25	25

Max Load (KG)	7.5	7.5	/	7.5	7.5
Operating Temperature (°C)	5~40	5~40	5~40	5~40	5~40
Operating Ambient Humidity	80%	80%	80%	80%	80%
Protection Class	IP21	IP21	IP21	IP21	IP21
Optional	RS232	RS232	-	RS232	RS232
Speed Range (RPM)	60~500	60~500	50~250	60~400 (optional to500)	
Speed Display	LCD	LCD	LCD	LCD	LCD
Time Function	yes	yes	yes	yes	yes
Time Range	0~99h59min	0~99h59min	0~99h59min	0~99h59min	0~99h59min
Time Display	LCD	LCD	LCD	LCD	LCD
Heating Power (W)	/	35/185	/	/	35/185
Temperature Range (°C)	/	RT+5~75	/	/	RT+5~75
Temperature Accuracy (°C)	/	0.1	/	/	0.1
Instrument Size (MM)	330x370x130	330x370x130 0	325x355x130	330x370x130 0	330x370x130
Packing Size (MM)	420x390x192	420x390x192 2	420x390x192	420x390x192 2	420x390x192
Net Weight (KG)	7	7	7.5	7	7
Gross Weight (KG)	8.5	8.5	9.0	8.5	8.5

table-1

2) Decolorizing Shaker Parameters (table-2)

Amplitude (MM)	4	4 (heat)	8	8 (heat)
Voltage (V)	Reciprocating	Reciprocating	Reciprocating	Reciprocating
Frequency (HZ)	100~240	100~240	100~240	100~240
Shaking Mode	50~60	50~60	50~60	50~60
Motor Type	DC brushless motor			
Motor Input Power (W)	35	35	35	35
Motor Output Power (W)	25	25	25	25
Max Load (KG)	7.5	7.5	7.5	7.5
Operating Temperature (°C)	5~40	5~40	5~40	5~40
Operating Ambient Humidity	80%	80%	80%	80%
Protection Class	IP21	IP21	IP21	IP21
Optional	RS232	RS232	RS232	RS232
Speed Range (RPM)	60~500	60~500	60~400 (optional to500)	
Speed Display	LCD	LCD	LCD	LCD
Time Function	yes	yes	yes	yes

Time Range	0~99h59min	0~99h59min	0~99h59min	0~99h59min
Time Display	LCD	LCD	LCD	LCD
Heating Power (W)	/	35/185	/	35/185
Temperature Range (°C)	/	RT+5~75	/	RT+5~75
Temperature Accuracy (°C)	/	0.1	/	0.1
Instrument Size (MM)	330x370x130	330x370x130	330x370x130	330x370x130
Packing Size (MM)	420x390x192	420x390x192	420x390x192	420x390x192
Net Weight (KG)	7	7	7	7
Gross Weight (KG)	8.5	8.5	8.5	8.5

table-2

3) Orbital Shaker Parameters (table-3)

Shaking Mode	Orbital	Reciprocating
Temperature Set	no	no
Temperature resolution (°C)	no	no
Amplitude (MM)	8	
Max Load (KG)	7.5	
Motor Type	DC brushless motor	
Motor Input Powerw	35	
Motor Output Powerw	25	
Speed Range (RPM)	60~400rpm (optional to 500)	
Speed Display	LCD	
Time Display	LCD	
Time Range	0~99h59min	
Power Supply	100~240V, 50/60Hz	
Weight (KG)	10	
Operating Ambient Temperature/Humidity	5~40°C, 80%	
Size LxWxH (MM)	430x390x200	
Protection Class	IP2	
Data	RS232(Optional)	

table-3

V. Operation Instructions

1. Position the shaker in a secure and stable location, and verify that the operating voltage and power grid specifications on the nameplate match.
2. Connect the power adapter.
3. Install the bracket. First, loosen the mounting screws of the bracket (two on each side), align the bracket properly, and then tighten the screws to complete the installation.
4. Turn on the power switch.
5. Perform a power-on self-test.
6. Parameters setting



- 1) Upon powering on, the meter enters a standby mode where the time area displays the currently configured time, and the speed area shows the current speed setting.
- 2) Configuration:
Adjust the speed by turning the speed knob.
Turn the time knob to set the desired duration, and press the time knob to toggle between setting minutes or hours.
- 3) Operation:
In standby mode, pressing the speed knob initiates immediate operation.
During configuration, if no adjustments are made for approximately 3 seconds, the meter automatically exits setup mode and begins operation.

VI. Troubleshooting

If the instrument fails to start after powering on, ensure the power adapter is securely connected.

If the speed does not reach the set value, check whether the load on the shaker exceeds its maximum capacity.

VII. Maintenance and Cleaning

Proper use and maintenance of the instrument are essential to extend its service life. Keep the instrument clean and prevent liquids from entering its interior.

Always power off the instrument before performing maintenance and cleaning. Use only recommended cleaning methods:

- Dye: Isopropyl Alcohol
- Building Materials: Water-Soluble Surfactant / Isopropyl Alcohol
- Cosmetics: Water-Soluble Surfactant / Isopropyl Alcohol
- Food: Water-Soluble Surfactant
- Fuel: Water-Soluble Surfactant

Before using alternative cleaning methods, confirm with the manufacturer or supplier that they won't damage the instrument. Wear protective gloves during cleaning.

Notice

Avoid cleaning electronic equipment with detergents. Instruments sent for repair must be cleaned to prevent contamination by hazardous substances before returning them in their original packaging.

When storing the product for extended periods, power off the instrument and store it in a dry, clean, stable environment at normal temperature.