Microplate Shaker

Instruction manual

Catalog No. MS-MPS

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service@majorsci.com

Version: V.01A
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Packing List

MS-MPSI

- 1x Microplate Shaker Unit with power cord

Signed by:

Date:

major science is liable for all missing or damaged parts / accessories within 7 days after customer received this instrument package. Please contact major science immediately regarding this issue. If no response within such time period from consignee party, that will be consignee party's whole responsibility.

Table of Contents

Warning

major science Microplate incubator shakerr has been tested and found to comply with the limits for the CE regulation. Also, it is RoHS compliant to deliver confident product which meets the environmental directive. These limits are designed to provide reasonable protection against harmful interference when the instrument series is operated in a commercial environment. This instrument series used together with power supply unit generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this instrument series in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. It is strongly recommended for the user to read the following points carefully before operating this equipment.

1. Read and follow the manual instructions carefully.
2. Do not alter the equipment. Failure to follow these directions could result in personal and/or laboratory hazards, as well as invalidate equipment warranty.
3. Use a properly grounded electrical outlet with correct voltage and current handling capacity.
4. Disconnect from power supply before maintenance and servicing. Refer servicing to qualified personnel.
5. Never use this instrument series without having the safety cover correctly in position.
6. Do not use the unit if there is any sign of damage to the external tank or cover. Replace damaged parts.
7. Do not use in the presence of flammable or combustible material; fire or explosion may result. This device contains components which may ignite such materials.
8. Refer maintenance and servicing to qualified personnel.
9. Ensure that the system is connected to electrical service according to local and national electrical codes. Failure to make a proper connection may create fire or shock hazard.
10. Use appropriate materials and operate correctly to avoid possible hazards of explosion, implosion or release of toxic or flammable gases

arising from overheated materials.

11. The unit shall be operated only by qualified personnel.

Safety Information

Use high level of precaution against any electrical device. Before connecting the electrical supply, check to see if the supply voltage is within the range stated at the rating label, and see to it that the device be seated firmly. Place the unit in a safe and dry location; it must NOT touch the surrounding. Follow the safety precautions for chemicals / dangerous materials. If needed, please contact qualified service representative or service@majorsci.com

Environmental Conditions

Ensure the instrument is installed and operated strictly under the following conditions:

1. Indoor use only
2. ≤95% RH
3. 75 kPa – 106 kPa
4. Altitude must not exceed 2000 meters
5. Ambient to 40°C operating temperature
6. Pollution degree: 2
7. Mains supply voltage fluctuations up to ±10% of the normal voltage

Avoiding Electrical Shock

Follow the guidelines below to ensure safe operation of the unit.

The Microplate incubator shakerr has been designed to utilize shielded wires thus minimizing any potential shock hazard to the user. major science recommends against the use of unshielded wires.

To avoid electrical shock:

1. In the event of solution spilling on the instrument, it must be dried out for at least 2 hours and restored to NORMAL CONDITION before each operation.
2. Never connect or disconnect wires loading from the power jacks when the red indicator light of power switch is on.
3. WAIT at least 5 seconds after stopping a run before handling output leads or any connected apparatus.
4. ALWAYS make sure that your hands, work area, and instruments are **clean** and **dry** before making any connections or operating the power supply.

5. ONLY connect the power cord to a properly grounded AC outlet.

Avoiding Damage to the Instrument

1. Do not attempt to operate the device if damage is suspected.
2. Protect this unit from physical damage, corrosive agents and extreme temperatures (direct sunlight, etc.).
3. For proper ventilation and safety concerns, keep at least 10 cm of space behind the instrument, and at least 5 cm of space on each side.
4. Use high level of precaution against the damages on the unit.
5. Do not operate the unit out of environmental conditions addressed above.
6. Prior to applying any cleaning or decontamination methods other than manufacturer's recommendation, users should check with the manufacturer's instruction to see if the proposed method will damage the equipment.

Equipment Operation

Follow the guidelines below to ensure safe operation of the unit:

1. NEVER access dangerous chemicals or other materials to prevent possible hazard of explosion and damage.
2. Do not operate the unit without lids or covers to prevent possible hazards.
3. A temporary conductivity caused by condensation might occur even though this series is rated Pollution Degree 2 in accordance with IEC 664.

Symbol

Symbols used on the power supply is explained below.

Indicates an area where a potential shock hazard may exist. Consult the manual to avoid possible personal injury or instrument damage.

Indicates disposal instruction.
DO NOT throw this unit into a municipal trash bin when this unit has reached the end of its lifetime. To ensure utmost protection of the global environment and minimize pollution, please recycle this unit.

Section 1 Introduction

1.1 Overview

The Major Science Microplate Shaker series is a compact and efficient instrument designed for routine mixing applications in life sciences, chemistry, medicine, bioengineering, and analytical or research laboratories.
This series is built for stability and long-term durability, making it ideal for daily experimental needs..

1.2 Product Description & Feature

The microplate shaker has a compact appearance and efficient operation.It can provide stable,reliable and regular shaking and mixing functions for 4 microplates.Suitable for methods that require gentle shaking to ensure that the ingredients in the wells do not overflow,or more vigorous stirring to effectively mix the small surface area of each well of the entire plate.Widely used in the fields of immunology,biotechnology,microbiology and pharmacology..

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Features:

- High-speed oscillating mixing, specially designed for microplates, suitable for desktops and incubators;
- Comes standard with a loading platform that can hold 4 microplates or culture plates;
- LED display screen, accurate countdown, and good experimental repeatability;
- Gentle shaking ensures that the sample in the hole remains in place, which can effectively increase the specific surface area;
- Can work continuously, inching or on a scheduled basis;
- High-quality motor, strong load-bearing capacity, longer life, suitable for long-term operation and in different temperature and humidity environments.

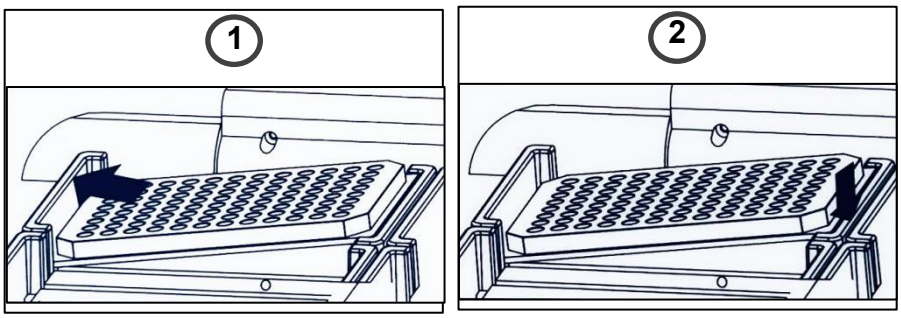
Section 2 Technical Specification

Cat. No.: MS-MPS	
Name	Microplate Shaker
Model	MS-MPS
Capacity	4 pcs microplates / cell culture plates / deep well plates
Speed	200~1500rpm
Time range	1min~99h59min
Power	80W
Size	Approx. L340×W210×H145mm
Weight	Approx. 5kg

Section 3 Installation Instructions

1. For a stable and correct power source in order to support the operation. The electrical system of location must be double-checked in order to ensure that it can transmit electricity well and provide enough electricity to instrument.
2. Place the unit on a sturdy, stable and level surface, in a safe and dry area.
3. Put the instrument on the place and plug in the main power.

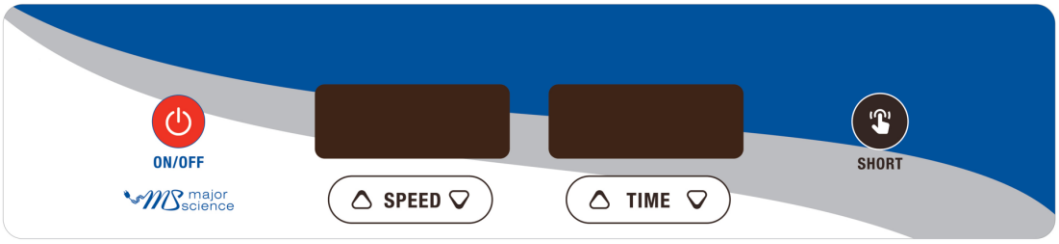
Microplate installation



As shown in the picture above, snap the microplate into the heating platform. After installation, it is recommended to press the surface of the microplate vertically and gently to ensure that the installation between the plate and the heating platform is smooth and there is no looseness.
Note: Improper installation of the microplate may cause damage to the instrument.

Section 4 Operation Instructions

4.1 Control interface



4.2 Operating Procedure

A) Turn on the power switch (ON/OFF), speed display (SPEED)/time display (TIME):
When the instrument starts, the initial values of speed (500) and time (00:00) are displayed;
B) Time setting:
In the time setting "TIME" area, press the "Δ" button on the left to increase the time, and press the "∇" button on the right to decrease the time;
C) Speed setting:
In the speed setting "SPEED" area, press the "Δ" button on the left to increase the speed, and press the "∇" button on the right to decrease the speed;
D) Start and stop (ON/OFF):
Press the "ON/OFF" button to start working, press the "ON/OFF" button again to stop working;
E) Short:
Long press the "SHORT" button to start jogging, release the "SHORT" button to stop jogging..

NOTE:

1. **Put the instrument on the stable and safe place.**
2. **Ensure the speed control knob to the lowest position before operating.**
3. **Ensure the power source (110V or 220V) is correct.**
4. **Wear safety glasses and other appropriate protection when operating.**
5. **Do not use instrument in a manner other than stated in this manual since the protection provided by the instrument may be impaired.**

Section 5 Trouble shooting and Maintenance

Many operating problems may be solved by carefully reading and following the instructions in this manual accordingly. Some suggestions for troubleshooting are given below. Should these suggestions not resolve the problem, contact our SERVICE DEPARTMENT or a distributor in your region for assistance. If troubleshooting service is required, please include a full description of the problem.

Troubleshooting	Failure cause	Solutions
Instrument vibrates greatly	Whether the instrument is placed levelly	Check whether the platform the instrument is placed on is flat
The displayed speed does not match the actual speed	Controller failure	Contact suppliers or manufacturers
button not working	The button is damaged	Contact suppliers or manufacturers
The screen does not display	Drive motor circuit failure	Contact suppliers or manufacturers
The display does not light up after turning on the power switch	Power is not connected	Check the power supply and connect it
	switch damaged	Swap switch
	Others	Contact suppliers or manufacturers

Encountering Problems

1. Check the troubleshooting section.
2. Call Technical Service or e-mail to service@majorsci.com
3. If the unit must be shipped back for repair, contact major science or the distributor for a Return Authorization Number and shipping instructions. The unit will be repaired and returned to you as quickly as possible.

Maintenance

If calibration is needed, please contact the manufacturer or your local distributor directly for support and return instructions. If calibration is needed, please contact the manufacturer or your local distributor directly for support and return instructions.

Cleaning

Cleaning of the device should be handled with care and in professional manners. Otherwise the manufacturer assumes no liability to damage caused by improper handling.

For the daily clean and maintains process. Clean the tanks, trays etc. with a soft cloth and clean with mild detergent and distilled water.

Dry in the shade. Then put away in safe place without exposure of sunlight and stay away from the dust.

Section 6 Ordering Information

Cat. No.	Description
MS-MPS-110	Microplate Shaker , MS-MPS, 110 VAC
MS-MPS-220	Microplate Shaker , MS-MPS, 220 VAC

Section 7 Warranty

major science warrants apparatus of its manufacture against defects in materials and workmanship, under normal service, for ***one year from the shipping date to purchaser***. This warranty excludes damages resulting from shipping, misuse, carelessness, or neglect. major science's liability under the warranty is limited to the receipt of reasonable proof by the customer that the defect is embraced within the terms of the warranty. All claims made under this warranty must be presented to major science within one year following the date of delivery of the product to the customer.

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