MS Rocking Shaker

Instruction Manual

Catalog No. MS-NRK-30

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Version 02A
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Packing list

MS-NRK-30

-1x MS Rocking Shaker with 30 x 30cm Platform

-1x Power Cord

-1x MS Rocking Shaker Instruction Manual

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.

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Warning

Major Science Rocking Shaker has been tested and found to comply with safety limits for the CE regulation. Also, MS Rocking Shaker 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 equipment is operated in a commercial environment. This equipment 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 equipment 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 this equipment is operated.

1. Read and follow carefully the manual instructions.
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 handing 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 case 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 in 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 MS Rocking Shaker has been designed to use with 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 accidentally spilling into the instrument, it must be dried out for a period of time (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. Check the displayed figures to see if the unit is functioning correctly before using this unit.
2. NEVER access dangerous chemicals or other materials to prevent possible hazard of explosion and damage.
3. Do not operate the unit without lids or covers to prevent possible hazards.
4. A temporary conductivity caused by condensation might occur even though this series is rated Pollution Degree 2 in accordance with IEC 664.

Symbols

The symbols used on MS Rocking Shaker are explained below.

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

Indicates a warning.
MOVING PARTS HANDS OFF

Indicate 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

1.1Overview

Major Science Rocking Shaker with well-designed engineering mechanism provides its outstanding performance of mixing function. The Rocking Shaker equipped with a microprocessor allows exact control ability on shaking speed and timer. Another remarkable feature is its high loading capability, up to 15kg. This unit provides a 30 cm x 30 cm platform, and it is perfect for bench-top and normal incubator operations. It's lightweight for easy mobility, and it provides quiet, reliable operation for any research. More importantly, Rocking Shaker is RoHS compliant and designed to comply with the CE regulation.

MS-NRK-30

1.2 Product Description

The rocking shaker is a microprocessor controlled instrument for precise rocking control. The operation may be continuous or timed, with the integral electronic timer ensuring accurate repeatability of time-sensitive incubations. Speed and time setting are straightforward in the LED display. The load weight, up to 15kg is its outstanding feature. An audible signal accompanies automatic switch-off to indicate the completion of a set time period. The interchangeable / stacking platforms, and accessories enable a wide choice of vessels to be used, including bottles, flasks and beakers, dishes, boxes, and petri-dishes.

Features:

Microprocessor controller with digital display
Continuous or timed operation with automatic switch-off
Variable shaking speed from 5 to 100rpm
Interchangeable / stacking platforms, and accessories for a variety of vessels
15kg carry capacity
30 x 30cm platform

Section 2 Product Specifications

Motion	Rocking
Max. Title Angle	12°
Controller	Digital microprocessor controller
Speed	5 - 100rpm
	1rpm increment
Timer	1 - 9999mins with alarm, continuous
	1min increment
Motor	DC brushless type
Operating Temperature	Ambient to 40°C
Carry Capability	15kg
Platform Dimension (W x L)	30 x 30cm
Additional Platform	Yes
Platform Material	Painted iron metal
Unit Dimension (W x L x H)	300 x 310 x 130 mm
Construction	Frame retard PC and Painted iron metal
Weight	Approx. 7.0 kg
Rated Voltages	110V / 220V~ selectable; 50/60Hz; 0.63A

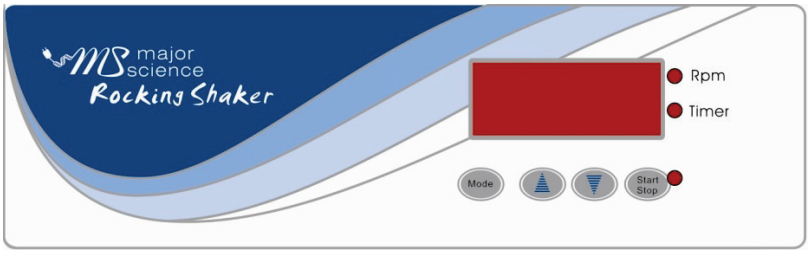
Section 3 Installation Instructions

Major Science Rocking Shaker is actually a pre-installed instrument. As long as it is placed on a sturdy and level surface in a safe, dry place, and sufficient spare space in the neighborhood for shaking movement, it is ready for operation.

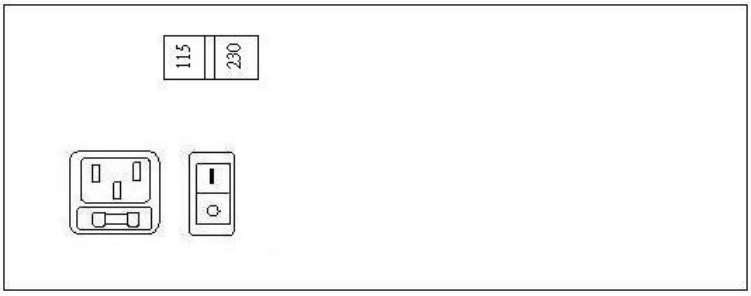
Section 4 Operation Instructions

4.1 Controls and Features

Please refer to the following page for the location of the following controls and features.



Front Control Panel



Rear of Unit

1.  **Key** -- to increase either rpm or time value

2.  **Key** - to decrease either rpm or time value

3. 

Key – activate or stop the unit.

4. 

Key – To set either rpm or timer setting mode

5. **TIMER** – This LED light indicates on Timer setting mode

6. **rpm** - This LED light indicates on rpm setting mode.

7. **AC Power Switch** – to switch the unit power ON/OFF

8. **AC Power Cord and Fuse Holder** – Power Cord Socket and Fuse Holder

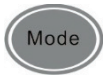
9. **Rated Voltage Selection Switch** – For select suitable rated voltage

4.2 Start the operation

1. Place MS Rocking Shaker on a sturdy and level surface in a safe, dry place, away from laboratory traffic.

2. Ensure that the AC power switch is OFF, and then plug the three-pronged power cord into a grounded three-prong AC outlet of the appropriate voltage (selectable 115V or 220V as indicated on the rating sticker near the AC cord on the back of the unit).

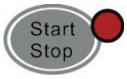
3. Turn the AC power ON.

4. Press the 

Key to select either rpm or timer model for setting up.

5. Press the  Key or  Key to adjust the desired rpm and timer.

6. Press the  Key to start shaking.

7. Press  Key again to stop the unit.

Section 5 Troubleshooting Guide

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.

Problem	Recommendations
LED does not light up	1. Check the **FUSE**
	2. Ensure that the AC power switch is ON
	3. Check the three-pronged power cord are properly plugged into a grounded three-prong AC outlet of the appropriate voltage

Replacing the Fuse

For additional fuses, contact Major Science co. ltd.

To replace the fuse:

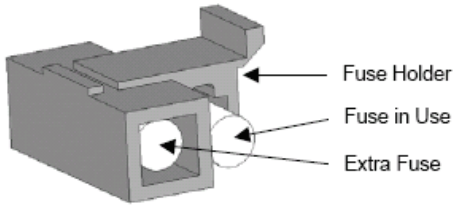
1. Turn off the main power switch on the rear of MS Rocking Shaker and detach the power cord from the rear of MS Rocking Shaker.

2. Open the fuse compartment located inside the Power Entry Module by inserting a small flat blade screwdriver into the slot below the ON/OFF switch. Turn the screwdriver to gently pry open the fuse compartment. **Note**: The fuse compartment will not open with the power cord in place.

3. Pull the fuse holder out of the compartment and inspect the fuse. If the fuse is burned or there is a break in the fuse element, replace the fuse with an identical type of fuse (0.63A/250V~) as provided in the fuse holder (see figure below).

4. Place the fuse holder back into the compartment.

5. Snap the cover closed.



Maintenance

Major Science Rocking Shaker equipped with DC Brushless motor required no maintenance under normal use. The housing may be cleaned with a moist cloth containing a mild soap solution.

Section 6 Ordering Information

Cat. No.	Description
MS-NRK-30	MS Rocking Shaker with 30 x 30cm platform and flat non-slip rubber mat
MS-NRK-30-FH250	MS-NRK-30 with 9 of 250ml flask holder
MS-NRK-30-FH500	MS-NRK-30 with 5 of 500ml flask holder

ACCESSORIES

MS-SP	Strip springs (pack of 2)
MS-P3030	Additional 30 x 30cm platform with attachable 10cm pillars 8 pcs and flat non-slip rubber mat
MS-DIMPLED-30	30 x 30cm dimpled mat
MS-FLAT-30	Non-slip rubber mat 30 x 30 cm

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. Consumable parts (rubber mat and strip spring) are not covered by our warranty. 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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