LAARMANN

Innovators in Solids

USER'S MANUAL

LAARMANN Rotary Sampler Type LMS-MP Multi-Purpose

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TABLE OF CONTENTS

1. SAFETY INFORMATION

Before using the machine, make sure to read and understand this manual thoroughly. Keep the manual close to the machine, easily accessible to all the users. Improper operation can cause injury to persons or damage to the equipment.

1.1. WARNING SYMBOLS

The following are the warning symbols that are used in this manual.

	This symbol indicates a potential risk and alerts you to proceed with caution.
	This symbol indicates the presence of high voltage and warns the user to proceed with caution.
	This symbol indicates risks associated with hot surfaces.

1.2. SAFETY INSTRUCTIONS

	**Safety instructions** Claims for damages in any form whatsoever, for injury to persons or damage to the machine, caused through non-observance of the following safety instructions, are excluded.
	**Use according to the intended purpose** Do not make any alterations to the machine and use only approved spare parts and accessories. Otherwise the Declaration of Conformity will lose its validity and this will also lead to the loss of any guarantee claims.
	**Transport** Do not knock, shake or throw the LMS-MP during transport. Otherwise the electronic and mechanical components may be damaged.
	**Packing material** Please keep the packing material for the duration of the guarantee period. In case of a complaint and return of the machine in unsuitable packing material, your guarantee claim will be lost.
	**Temperature variations** If the LMS-MP is subjected to high temperature variations, protect it against condensed water. Otherwise the electronic components may be damaged.
	**Ambient temperature** If the temperature drops below 5°C or exceeds 40°C, electronic and mechanical components can be damaged. Performance can be changed to an unknown extent.

	**Atmospheric humidity** If the humidity exceeds 85%, electronic and mechanical components can be damaged. Performance can be changed to an unknown extent.
	**Electrical connection** If the values for the mains power supply on the name plate are not observed, the electrical and mechanical components may be damaged.
	**Inserting dividing module** Ensure that the dividing module is inserted correctly. Otherwise they can be damaged, when starting the machine.
	**Removing and opening dividing module** When removing and opening dividing module, always wear protective gloves.
	**Materials** Observe the relevant regulations and directives for handling chemicals and hazardous materials. Dividing of materials, which give a risk of fire or explosion, is prohibited.
	**Cleaning** Do not clean the LMS-MP under running water. Danger to life through electric shock. Use only a soft cloth moistened with water. Cleaning agents and solvents should not be used, not for cleaning the milling tools either.
	**Repair** For your own safety, repairs must be carried out only by authorized service technicians.

2. GENERAL DESCRIPTION

The LMS-MP is a process and laboratory machine, which is suitable for milling and homogenizing soft, fibrous, hard and brittle materials in the dry and wet state.

The Multi-Purpose Divider to handle 3 different modules and to divide solid samples continuously (Module 1), in buckets (Module 2) or in bottles (Module 3). This manual can be used as an user's manual for all versions, since the basic controls are the same. It might however be that some optional instructions are not applicable for your specific version.

3. TECHNICAL FEATURES

3.1. CONSTRUCTION

The housing of LMS-MP is made of steel plate varnished with high resistant painting.

Protective equipment

The milling chamber of the LMS-MP is enclosed by a strong covering hood.

Starting of the machine is possible only with the hood closed.

3.2. TECHNICAL DATA

Power supply	230V ± 10% - 50/60Hz
Max. volume of inlet funnel	60 Litres
Buckets	4/6/8/10
Weight	App. 300 kgs
Noise emission (without milling balls)	70 dB(A)
Ambient temperature	5°C - 40°C
Atmospheric humidity	< 85% RH

4. INSTALLATION

4.1. UNPACKING

Before the installation, carefully examine the delivery for possible damage or missing parts. Open the box and take the machine out of the box. Check that the machine has not been visibly damaged during the transport.
Please keep the packing material for the duration of the guarantee period. In case of a complaint and return of the machine in unsuitable packing material, your guarantee claim will be lost.
Check that the mains cord is compatible with the local standard.
If any kind of damage occurred during transport, immediately make a complaint to the carrier. Any incorrect delivery or missing parts should be reported to the distributor.

4.2. SELECTING THE RIGHT PLACE

When selecting the right place for the machine, please consider the following:

- Put the device on smooth and stable concrete floor.
- Leave enough space beyond the device.
- Leave enough space around the device, that you will easy control and maintain it.
- Don’t use the device in surroundings, where there are fast temperature and humidity changes. Also avoid places exposed to direct sunlight and places nearby heating devices.
- Avoid places, where the possibility of shocks and vibrations exists.
- Bolt the ball/rod mill securely to a floor that can safely support the weight of the mill using anchors.

Note: The machine should not be placed so, that it is difficult to pull out the cord plug from mains power supply.

4.3. CONNECTING THE POWER CORD

The correct voltage and frequency for the LMS-MP are given on the name plate. Ensure that these values correspond to the available power supply system.
Connect the power cord to a grounded wall socket.
To avoid interference from noise, surges and spikes, a dedicated line is preferred. If no such line is available, avoid lines to which powerful electric motors, refrigerators and similar devices are connected.

Delivery content (depending on version)

Picture 1)

Laarmann Rotary Sampler Type LMS-MP Multi-Purpose
Module 1 for continuous operation
Module 2, bucket module with 10 buckets.

5. Instructions for use

5.1. Pump up the unit by pedal

After unpacking use the foot pedal on picture 2 to pump up the unit.

Picture 2) Foot Pedal

Remove the bolt in picture 3 pull the pin out picture 4 then affix the gutter as in picture 5 & picture 6 then replace the bolt and fix as in picture 7 & picture 8.

Picture 3

Picture 4

Picture 5

Picture 6

Picture 7

Picture 8

When opening the lid the safety lock will automatically turn of the machine and prevent it from starting .

After plugging in the unit wait until the plc is running and the screen will display picture 13 check to see that the emergency stop is not activated and then press F4 to reset the system.

Picture 13

The next screen is a choice F1 Automatic F2 Open lid F3 Hand picture 14

Picture 14

F3 Hand Picture 15 pressing and holding F1 will turn the divider at a fixed speed, pressing and holding F2 will activate the vibration feeder at a fixed frequency, Pressing F3 will unlock the lid for 30 seconds as soon as the lid is opened and closed it will lock again. F4 goes back to the previous menu Picture 16.

Picture 15 Picture 16

Pressing F2 will unlock the lid for 30 seconds as soon as the lid is opened and closed it will lock again
Pressing F1 will start the automatic menu.
Picture 17 is for choosing the speed of the divider between 18 – 53 Rotations per minute

Picture 17

F1 goes to the next Menu F2 goes Back F3 + F4 – is for Choosing the Amplitude of the vibration feeder between 0 – 100%. Picture 18.

Picture 18

F1 goes to the next Menu F2 goes Back F3 + F4 –

Starting the unit. Picture 19. F3 to Start the unit.

Picture 19

F1 Unlocks the lid for 30 seconds. Seeing this the lid is unlocked and can be opened. F2 is to go back to the previous menue.F3 is to Start. What starts the Divider and then after a short time starts the feeder. Picture 20

Picture 20

Picture 21 is when it is running Press F4 to stop. What stops the feeder directly and then after a time stops the divider then after 5 seconds the lid can be unlocked by pressing F1

Picture 21

5. Instructions for use

5.1. Mounting RSD-R (with reject)

First mount the dividing head and the sample collector in the sampled divider as shown on Picture 24, fix the push fit chute to the correct position as shown on picture 25.


Picture 24

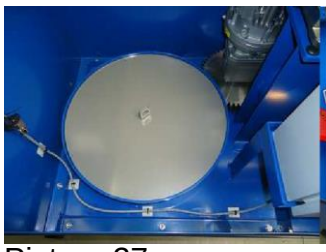

Picture 25


Picture 26

5.2. Mounting RSD (without reject)

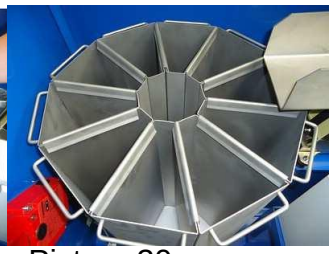
First mount the dividing base plate the sample buckets in the sample divider as shown on Picture 27 and 28, fix the buckets with the clips Picture 29.

The divider can be operated Picture 30.


Picture 27


Picture 28


Picrture 29


Picture 30

5.3. Special vibratory feeder instruction


Picture 31
Flexible pipe to fit inside the vibratory feeder


Picture 32
Flexible pipe connected correctly in Vibratory feeder

6. WORKING INSTRUCTIONS

6.1. GENERAL

The LMS-MP is a high performance product. Because of the large selection of accessories, the LMS-MP is a machine with many different application possibilities in laboratories, industry and research. It is used mainly in the chemical and pharmaceutical sectors and in mineralogical applications etc.

	The dividing process can only be started, when the hood is closed.
	Do not open the hood during the milling process. Although the grinding barrel are brought to a standstill immediately after the opening of the hood.
	Do not divide inflammable or explosive samples!
	Please note that the properties and therefore the dangerous nature of your sample, can change during the dividing process.

6.2. MAINTENANCE

LMS-MP is maintenance free. When used properly, no maintenance and setting is necessary. Do not make any alterations to the machine and use only approved spare parts and accessories.

6.3. WEAR

The divider can become worn out, depending on the frequency of the dividing operation and the material to be divided. All parts should be regularly checked for wear and replaced, if necessary.

6.4. CLEANING

	Before cleaning the machine, unplug the mains cord from wall socket. Use only a soft cloth moistened with water. Cleaning agents and solvents should not be used, not for cleaning the divider parts either.
	Do not clean the LMS-MP under running water. Danger to life through electric shock.

Note: Subject to technical modifications.

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