



RSH-1 Portable Rotor-Stator Homogenizer

Please read the User Manual carefully before use, and follow all operating and safety instructions!



user manual

english

User Manual



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Preface

Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

Service

In order to guarantee this equipment works safely and efficiently, it must receive regular maintenance. In case of any faults, do not try to repair it yourself. If help is needed, you can always contact your supplier or Labbox via www.labbox.com.

Please provide the customer care representative with the following information:

- Serial number
- Description of problem
- Your contact information

Warranty

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 12 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident, or abnormal conditions of operation.

For claim under the warranty please contact your supplier.

Introductory Remarks

Thank you for purchasing the portable rotor-stator homogenizer RSH-1. Please read the operating instructions in full before using the instrument and follow the safety instructions.

This homogenizer is a high-speed dispersing instrument based on rotor-stator technology. This product is for laboratory use only and is used mainly for life science applications. Based on the type of rotor-stator probe (dispersion head) used, the working volume range is from 0.1 ml to 250 ml. The 5 mm probe is designed for handling 0.1 ml to 50 ml volume samples and the 10 mm probe for 1 ml to 250 ml volume samples. The probe can be disassembled for easy cleaning.

Due to the high rotation speed of the rotor, the medium to be processed is automatically drawn axially into the probe and then forced radially through the slots. This produces an extremely strong shear force and provides optimal homogenization of the samples.

The device is designed for continuous operation, although most samples are processed within a few minutes. Please note that longer sample processing times will increase the temperature of the medium, and may be detrimental to the sample integrity, while only offering small improvements in the sample homogenization.

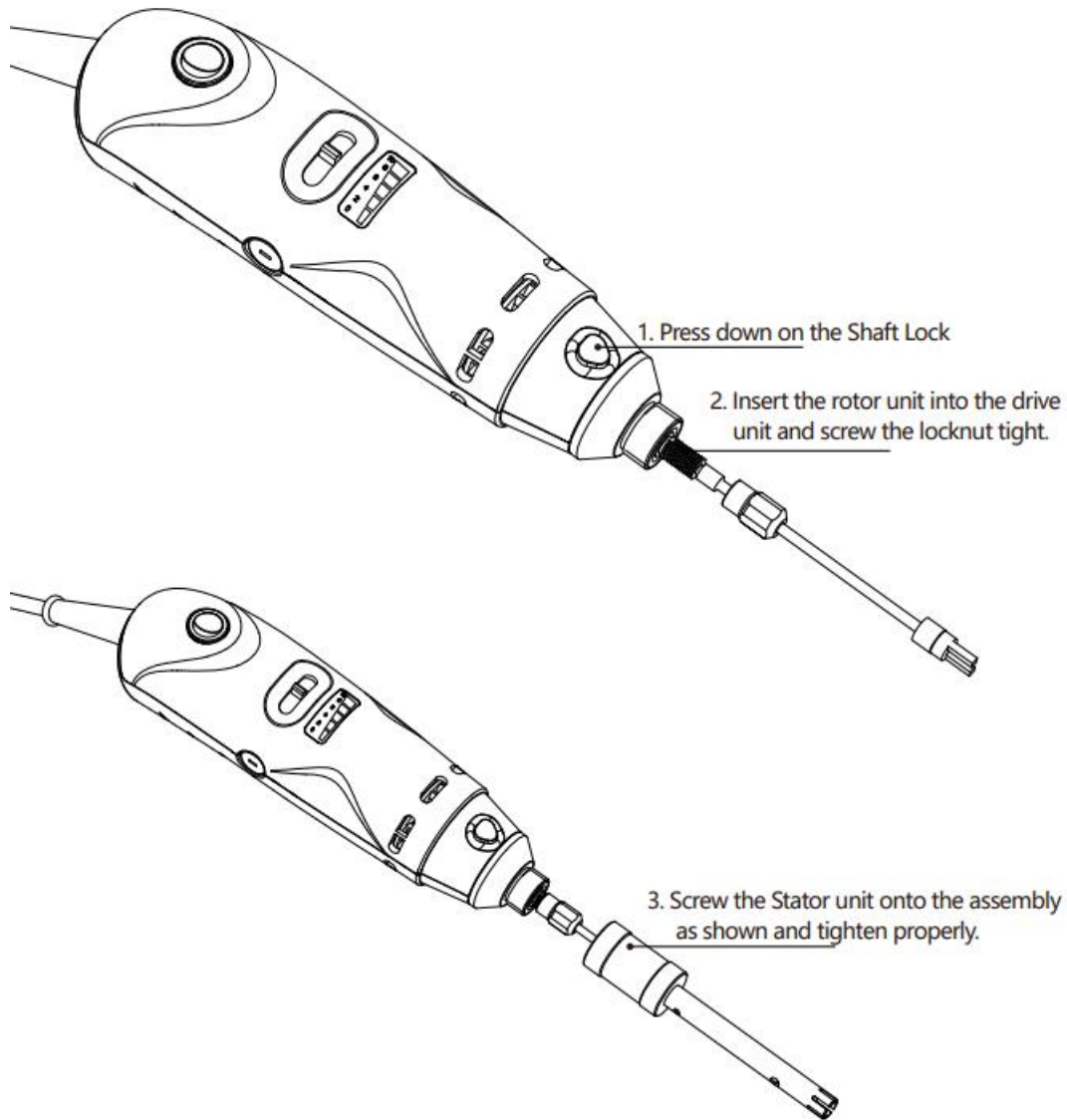
1. Safety Instructions

- Inspect the device and the probe. Do not use damaged components and contact the manufacturer for replacement parts.
- Set up the stand in a spacious area on an even, stable, clean, non-slip, dry, and fireproof surface.
- Ensure that the stand does not move.
- Maintain basic electrical safety precautions necessary to reduce the risk of fire, electric shock, and personal injury.
- Do not operate the instrument in explosive atmospheres, or with hazardous substances.
- Avoid use in a humid environment and avoid water splashing on to the motor housing.
- Ensure that the voltage listed on the name plate matches the supply voltage.
- There is hazard of electrostatic discharges between the medium and the homogenizer probe.
- When working with glass vessels, the probe must not come into contact with the glass.
- Assemble the probe as per the instructions and ensure it is tightened well before use.
- Never run probes dry, as the PTFE sleeve bearing may be damaged if the probes are not cooled by the medium.
- The ventilation slots of the drive unit must not be obstructed.
- When the instrument is running at high speed, the ventilation hole will generate airflow. Do not keep powder or other light items close to the ventilation holes, as they can be blown away by the airflow.
- Ensure that only trained staff work with the instrument.
- Please only use the probe provided by the manufacturer to ensure a safe operation.
- In the event of unusual, grinding, or loud noise from the device, immediately switch the instrument off. Replace the homogenizer probe. If there is no change in performance after replacement, contact customer support for troubleshooting, repair, or replacement.

2. Unpacking and Inspection

Please open the box carefully and inspect for damage. If you find any damage to the instrument, please notify the supplier or manufacturer immediately.

3. Rotor-Stator Probe Installation



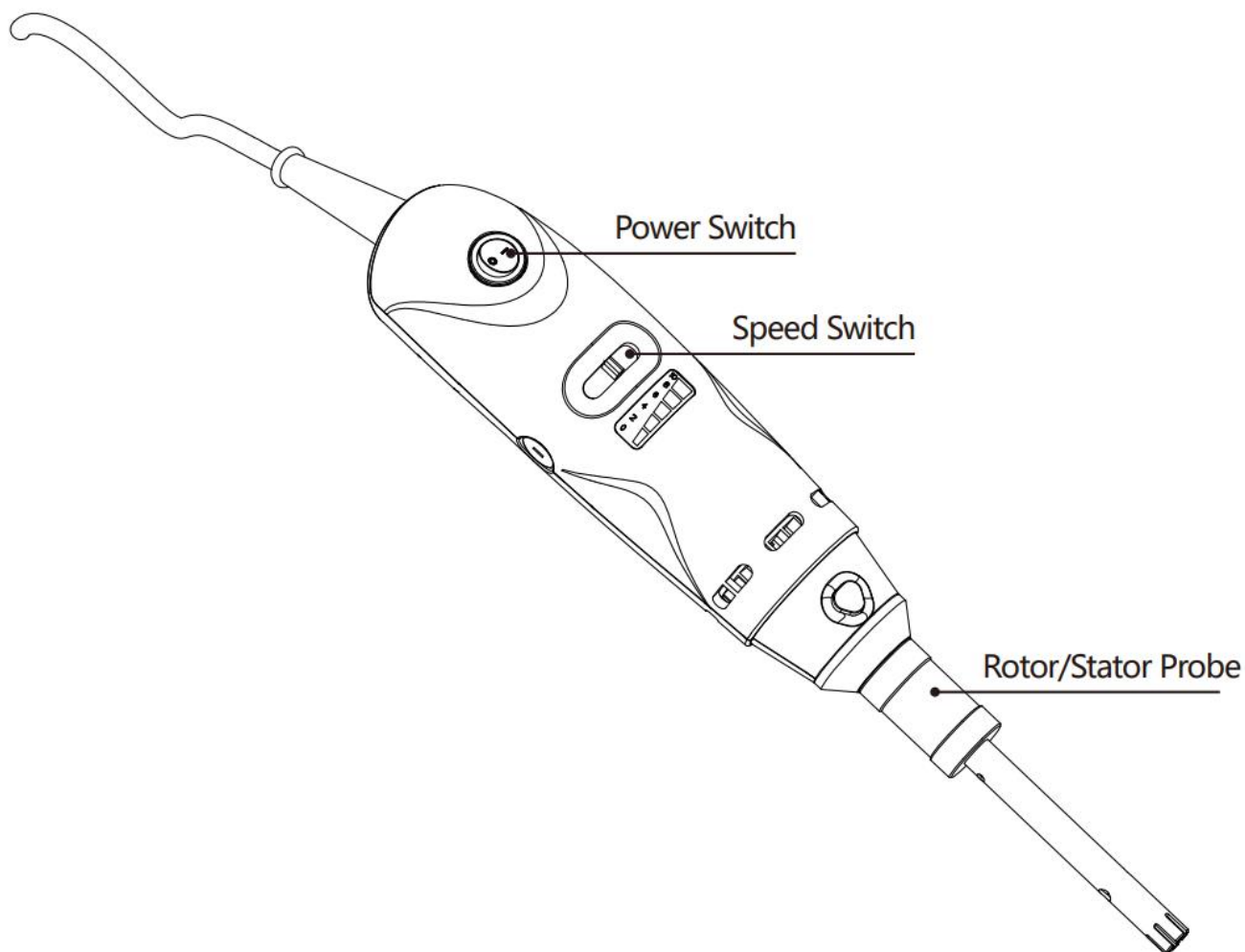
Remarks: In Step 2 insert the rotor unit into the drive unit so that it is fully seated against the drive unit. Hand tight the locknut while holding the rotor unit in place.

4. Operating Instructions

1. Ensure that the voltage listed on the name plate matches the supply voltage.
2. Ensure that the rotor-stator probe is screwed tightly on before use to prevent separation at high speeds.
3. Before switching on the instrument make sure that the probe is immersed at least 20 mm below the liquid level to prevent the medium from splashing out. Do not let the probe touch the bottom of the container. Maintain a gap of at least 10 mm from the bottom.

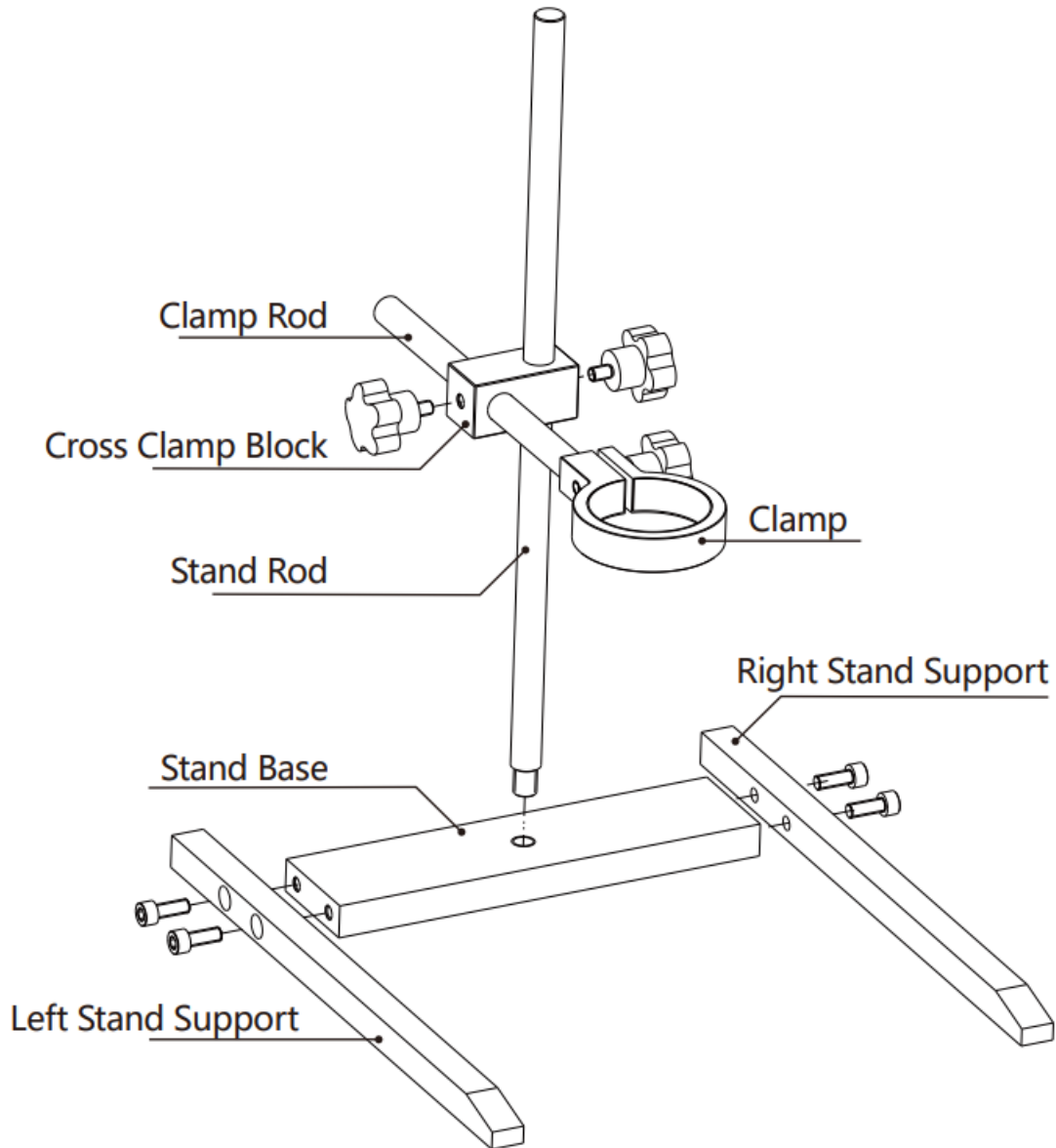
Note: The optimal immersion depth of the rotor-stator probe is approximately 2/3 below the liquid surface and 1/3 above the bottom of the container.

4. Ensure that the device is set to the lowest speed setting before switching it on.
5. Gradually increase the speed to the desired level.
6. Reduce the speed if the speed is too high and medium splashes out of the vessel.



5. Assembly of the Clamp and Stand

1. Use the screws provided to secure the left and right stand supports onto the stand base.
2. Screw the Stand Rod onto the stand base.
3. As shown in the picture below, insert the Cross Clamp Block onto the Stand Rod and secure it in the desired position by tightening the screw near the Stand Rod. Also, insert the Clamp Rod into the Cross Clamp Block (as shown in the figure) and secure in a desired position by tightening the screw near the Clamp Rod.
4. Secure the Clamp onto the Clamp Rod using the screw provided in the kit.
5. Secure the rotor-stator homogenizer into the clamp and tighten it before use.



6. Technical Specifications

Reference	RSHO-250-001
Power Supply	110~120 V / 60 Hz, 220-240 V / 50-60 Hz
Input Power	160 W
Output Power	110 W
Max. Linear Velocity of the Rotor	6.3 – 14 m/sec
Max. Viscosity	5,000 mPas
Noise	≤72 db (A)
RPM Range	8000~30000 rpm
Volume Range	0.1~250 ml
Weight	0.7 kg
Permissible Environment	0-40 °C, 85 % relative humidity
Mode of Speed Regulation	Stepless
Protection Class	IP20
Probe Material	316L stainless steel
Bearing/Sleeve Material	PTFE

7. Cleaning and Maintenance

- Please use a wet cloth to wipe the instrument gently, do not use corrosive liquids or detergents for cleaning.
- Ensure that the rotor-stator probe is always cleaned properly after every use. For proper cleaning the rotor-stator probe should be disassembled and thoroughly washed with a mild detergent.
- If your application does not require sterilization, you may perform simple cleaning of the rotor-stator probe in an appropriate solvent between uses. For example, if you're homogenizing multiple samples with the same or similar composition, you could simply use the same solvent to remove most of the residue between samples. This should be done as soon as possible after use to avoid materials drying on to the rotor-stator probe. You will not have to dismantle the unit for this type of cleaning.
- The probe is made of stainless steel, but some chemicals may still cause corrosion. So, while cleaning use a solvent that dissolves the residue (like alcohol, water, or a mild detergent), but does not harm the materials of construction.
- The drive unit is maintenance-free but not immune from wear. The carbon brushes of the motor wear down over the time. Please contact your supplier for replacement parts and use only parts supplied by the manufacturer to maintain warranty support. Disconnect the power supply before replacing the carbon brushes. You should never attempt to replace the motor brushes if the homogenizers are still under warranty, as it would void the warranty. Contact the manufacturer for warranty support.

Sterilization of Rotor-Stator Probes

- Disinfectants: Disinfecting using germicidal solutions (like formalin, phenol, alcohol, etc.)
 - Residues of disinfectant must subsequently be removed with sterilized water, and then dried to avoid contaminating future samples and also prevent corrosion of probes.
 - Please ensure that all chemical used are compatible with SS 316L and PTFE.
- If a more thorough sterilization is required, the rotor-stator probe can be autoclaved. Please note that the probes are to be cleaned prior to autoclaving to ensure all residue is removed from the parts. If not, autoclaving could simply bake the residue. Hot Air Sterilization (at 160 °C) is also an alternative to autoclaving.

Nota importante para los aparatos electrónicos vendidos en España

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:



Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden ser eliminados en forma de residuos urbanos.

De conformidad con la Directiva 2012/19/UE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la posibilidad de devolver sus RAEE para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

Remarque importante pour les appareils électroniques vendus en France

Informations sur la protection du milieu environnemental et élimination des déchets électroniques :



Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.

En réponse à la réglementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de ecosystem dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur www.ecosystem.eco).

L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

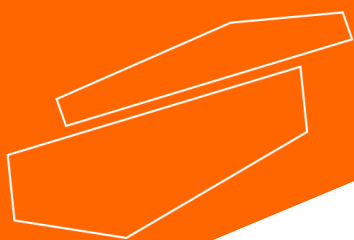
Nota importante per le apparecchiature elettroniche vendute in Italia

Istruzioni sulla protezione ambientale e sullo smaltimento dei dispositivi elettronici:



Le apparecchiature elettriche ed elettroniche contrassegnate con questo simbolo non possono essere smaltite come rifiuti urbani.

In conformità con la Direttiva 2012/19 / UE, gli utenti dell'Unione Europea di apparecchiature elettriche ed elettroniche hanno la possibilità di restituire i propri RAEE per lo smaltimento al distributore o al produttore di apparecchiature dopo averne acquistato uno nuovo. La rimozione illegale di apparecchiature elettriche ed elettroniche è punibile con una sanzione amministrativa.



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