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Operating Instructions
使用说明书

Rotor-Stator Homogenizer
手持均质仪
OH301

Contents

Preface

Thank you for purchasing the OH301 Rotor-Stator Homogenizer. Please read the operating instructions in full before using the instrument and follow the safety instructions.

The Homogenizer is a high-speed dispersing instrument based on the 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 0.1ml to 250ml. The 5mm probe is designed for handling 0.1ml to 50ml volume samples and the 10mm probe for 1ml to 250ml 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 continues 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 airflow .

- Ensure that only trained staff work with the instrument.
- Please only use the probe provided by the manufacturer to ensure 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 & Inspection

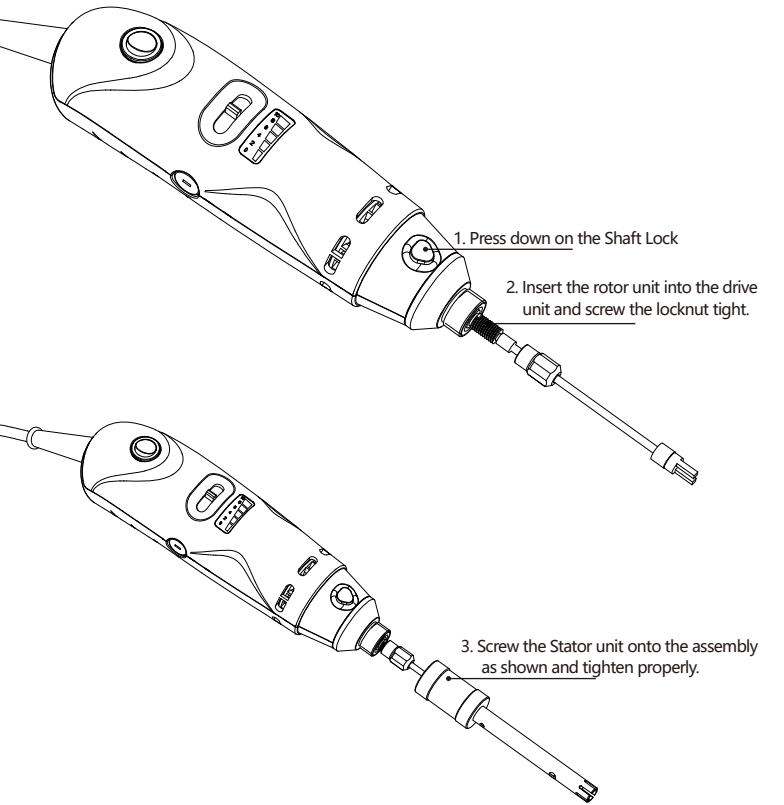
Please open the box carefully and inspect for damage. If you find any damage to the instrument, please notify the seller or factory immediately.

Packing list

Part Number	Item	Qty.
OH301	Handheld Homogenizer/Main Unit	1
OH301P10	10mm Rotor/Stator Probe (Standard)	1
OH301P07	7mm Rotor/Stator Probe (optional)	1
OH301P05	5mmRotor/Stator Probe (optional)	1
OH301S01	Stand & Clamp	1
	Operating Instructions	1
	Warranty Card	1

A package normally includes: the Homogenizer, one 10mm Rotor/Stator Probe (or other probes according to your order), one stand with clamp, Operating instructions, and Warranty Card

3. Rotor/Stator Probe Installation



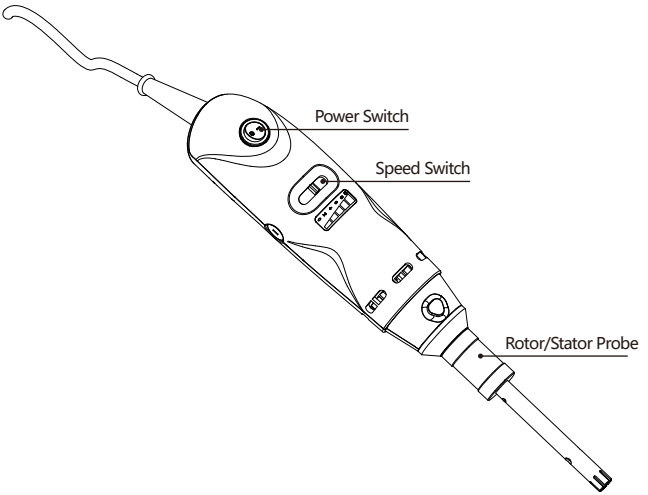
Remarks: In Step 2 Insert the rotor unit into the drive unit so that it is fully seated against the drive unit. Hand tight the locknut while holding the rotor unit in place.

4. Operating Instruction

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.

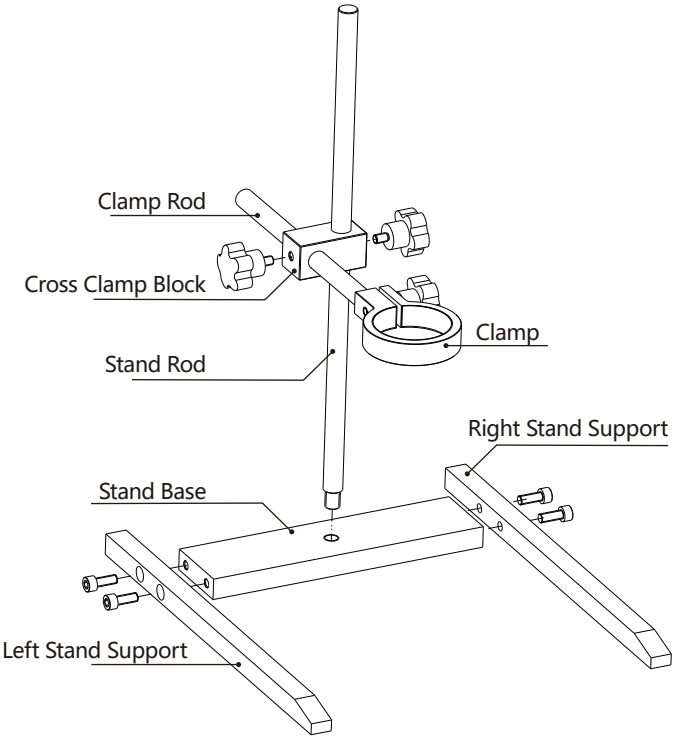
Note: The optimal immersion depth of the rotor/stator probe is approximately 2/3 below the liquid surface and 1/3 above the bottom of the container.

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 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.


Clamp Rod
Cross Clamp Block
Clamp
Stand Rod
Right Stand Support
Stand Base
Left Stand Support

6. Technical Specifications

Model	OH301
Power supply	110~120V/60Hz, 220-240V / 50-60 Hz
Input power	160W
Output power	110W
Max. Linear Velocity of the rotor	6.3 - 14m/sec
Max. Viscosity	5,000 mPas
Noise	≤72db(A)
RPM range	8000~30000 rpm
Volume range	0.1~250ml
Weight	0.7kg
Permissible environment	0-40℃, 85% relative humidity
Mode of speed regulation	Stepless
Protection class	IP20
Probe material	316L stainless steel
Bearing/Sleeve Material	PTFE

7. Cleaning & 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 doesn't 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 still under warranty, as it would void the warranty. Contact the manufacturer for warranty support.

Sterilization of Rotor/StatorProbes

- Disinfectants: Disinfecting using germicidal solutions (like formalin, phenol, alcohol etc.)
  - Residues of disinfectant must subsequently be removed with sterilized water, and then dried so as 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.

8. Warranty

You have purchased an original laboratory machine which meets the highest engineering and quality standards. In accordance with our warranty conditions, the warranty period is 12 months from our shipment. For claims under the warranty, please contact your local supplier. You may also send the instrument directly to us with an invoice and a description note of the problem. The shipping costs will be paid by the user and will be confirmed prior to shipping.

The warranty does not cover natural wear and tear of parts, nor does it apply to faults or damage caused by negligence, improper operation, or failure to use and maintain the machine in accordance with the instructions in this operating manual.

We reserve the right to change or modify or improve any of our instruments without any obligation to make corresponding changes to any instrument previously sold.

目 录

请仔细阅读说明书并在说明书的操作指导下安全使用本仪器。
外形和性能指标如有变动，概不另行通知。

前言

感谢您购买OH301手持均质仪，用户在使用本仪器之前，请仔细阅读此说明书，并按照说明书中的指导和规范进行操作。

OH301手持均质仪是一款基于转子与定子的切割原理来实现高速分散的仪器。本产品仅供实验室使用，主要用于生命科学领域的应用。应用不同的分散头可处理0.1ml~250ml的液体样品。5mm的分散头可处理0.1ml~50ml的样品，10mm的分散头可处理1ml~250ml的样品。分散头采用可拆卸设计，便于清洗。

由于转子作高速旋转，待分散的介质自动地沿轴向被吸入分散头，然后呈放射状以高速通过转子与定子之间的狭小空间，施加在分散介质上的巨大加速度产生强烈的剪切和破碎力，从而实现样品均匀化。

该设备是为持续操作而设计的，但通常在几分钟内就能达到最终的分散效果。请注意，处理时间较长的话对分散效果不会有很明显的提高，但可能会增加介质的温度。

安全说明

- 每次使用时，请事先检查设备和分散头。不要使用损坏的部件。
- 支架应放置在空旷的地方，确保表面平稳、干净、防滑、干燥和防火。
- 确保支架固定不移动。
- 保持必要的基本电气安全预防措施，以减少火灾、触电和人身伤害的风险。
- 不要在易爆环境中，或者在危险物品旁操作本仪器。
- 避免在潮湿的环境中使用，避免水溅到驱动装置上。
- 确保使用的电压与仪器铭牌上所要求的电压一致。
- 介质和分散头之间存在静电放电的危险。
- 在处理玻璃容器里的样品时，分散头不能接触到容器底部。
- 按照说明书组装分散头，并确保在使用前旋紧各部件。
- 不可让分散头空运行，因为如果分散头没有被介质冷却，PTFE轴套可能会被损坏。
- 不可遮挡仪器的通风孔正常出风。
- 当仪器高速运转时，通风孔会产生气流。周边不要防止粉末或其他轻质物品，防止吹飞。
- 确保只有接受过培训的工作人员才能操作本仪器。
- 请只使用制造商提供的分散头，以确保安全操作。
- 如果设备出现异常噪音，请立即关闭设备，更换分散头。如果更换后没有改善，请将设备退回给销售商或生厂商。

开箱和检查

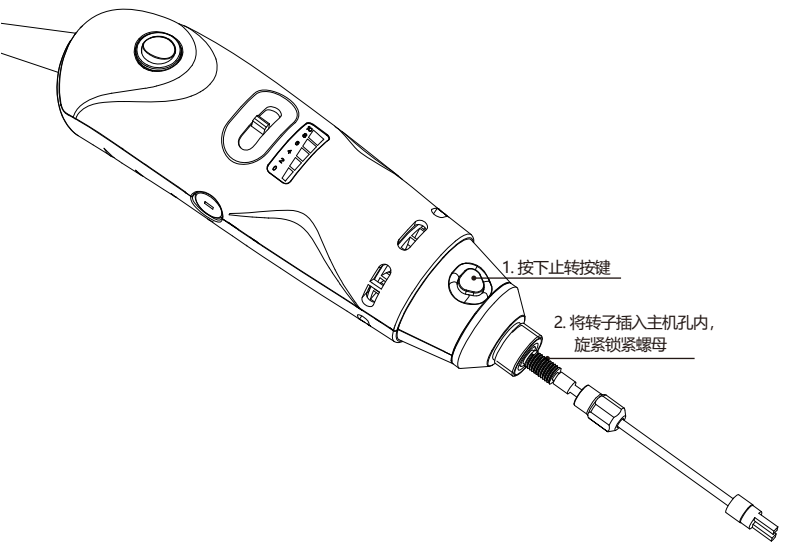
用户开箱时请仔细检查是否有损坏。如果发现仪器有任何损坏，请立即通知销售商或生厂商。

包装清单

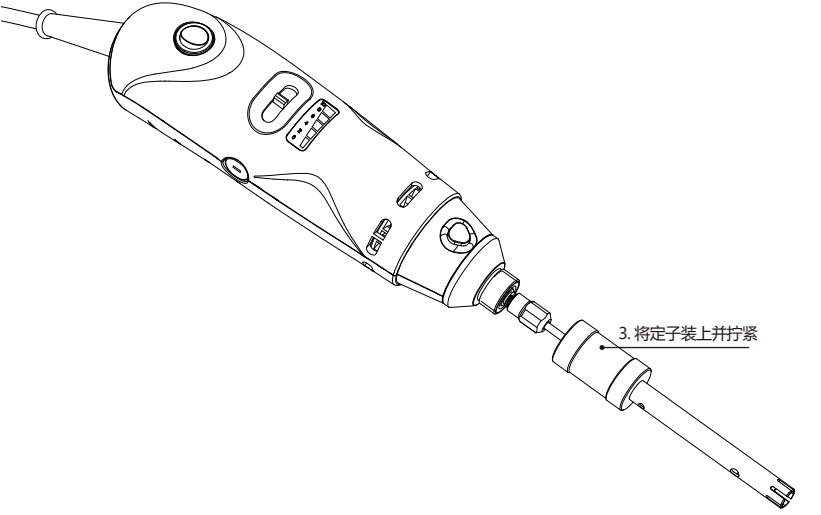
型号	项目	数量
OH301	手持均质仪/主机	1
OH301P10	10mm分散头（标配）	1
OH301P07	7mm分散头（选配）	1
OH301P05	5mm分散头（选配）	1
OH301S01	支架	1
	说明书	1
	保修卡	1

包装含有：一个OH301手持均质仪，一个10毫米分散头（或根据您的订单提供其他分散头），固定支架，操作说明书，以及保修卡。

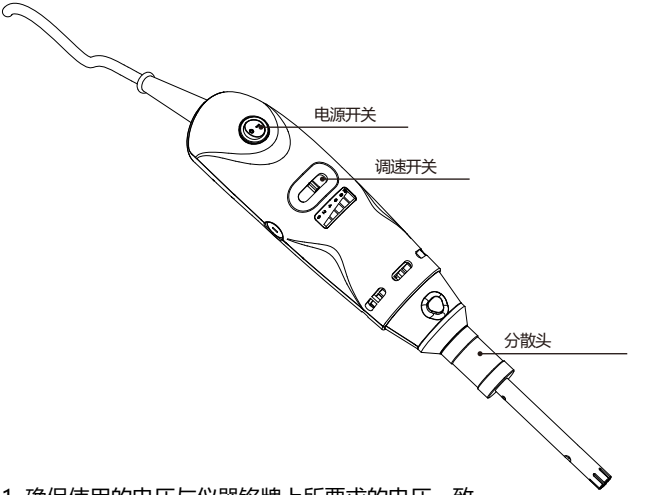
安装分散头



备注：在步骤2中，将转子插入主机孔内，需使转子的顶部接触到主机体，再旋紧锁紧螺母将转子固定好。



操作说明



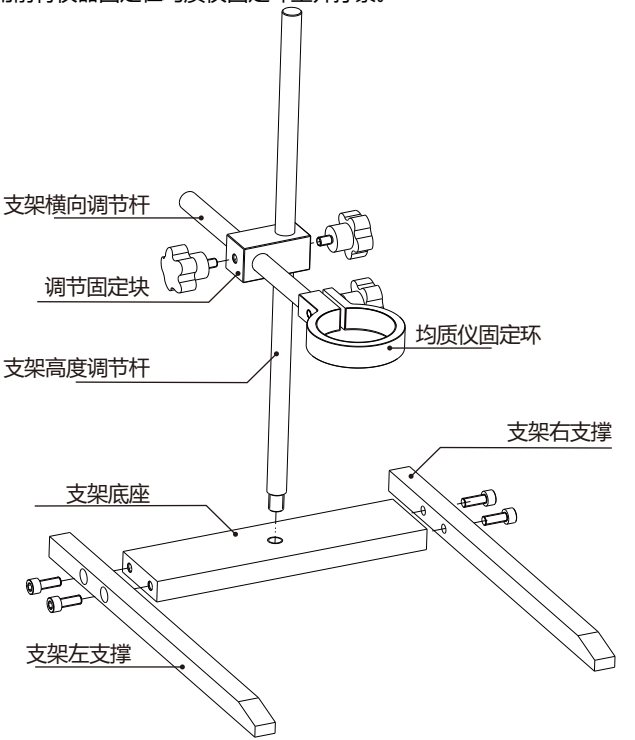
1. 确保使用的电压与仪器铭牌上所要求的电压一致。
2. 使用前确保分散头已拧紧，以防止在高速运作下分离。
3. 启动设备前，请将调速开关置于最低转速。
4. 应以最低速度启动，然后逐渐提高转速，直到所需数值。
5. 在启动仪器之前，确保分散头浸入液面以下20毫米，以防止介质飞溅出来。不要让分散头接触到容器的底部，与底部保持至少10毫米的间隙。

注意：分散头的最佳浸入深度应是在液体表面以下约2/3处，在烧杯底部以上1/3处。

6. 如果因为速度过高而导致介质从容器中溅出，则应降低速度。

支架组装

1. 使用提供的螺钉将左右支撑固定在支架底座上。
2. 将支架高度调节杆拧到支架底座上。
3. 如下图所示，将调节固定块插入支架高度调节杆，并通过拧紧附近的螺钉将其固定在所需位置。同时将支架横向调节杆插入调节固定块（如图所示），并通过拧紧附近的螺钉将其固定在所需位置。
4. 使用提供的螺钉将均质仪固定环固定在支架横向调节杆上。
5. 使用前将仪器固定在均质仪固定环里并拧紧。



技术规格

产品型号	OH301
电源输入	110~120V/60Hz, 220-240V / 50-60 Hz
输入功率	160W
输出功率	110W
转子最大线速度	6.3 - 14米/秒
最大粘度	5,000 mPas
噪声	≤72db(A)
转速范围	8000~30000 rpm
处理量范围	0.1~250ml
重量+	0.7kg
工作环境	0-40℃, 85%相对湿度
调速方式	无级变速
防护等级	IP20
分散头材质	316L不锈钢
轴套材质	PTFE

清洁和维护

- 请用湿布轻轻擦拭本仪器，不要使用腐蚀性液体或洗涤剂进行清洁。
- 确保每次使用后都对分散头进行适当清洁。为了方便清洁，应该把分散头拆下来。
- 如果无需进行消毒，可以在每次处理完样品后，用适量的溶剂对分散头进行简单的清洗。例如，如果是同时对成分相同或相似的多个样品进行均质处理，可以简单地使用相同的溶剂来清除一些残留物。建议在使用后尽快清洁，以避免分散头上的样品变干。进行此类清洁时无需拆卸分散头。

- 不锈钢分散头具有较好的耐腐蚀性，但仍存在一些化学品会对其造成损害的可能。因此，在清洗时要使用能够溶解残留物的溶剂，但不能损害PTFE轴承和不锈钢。
- 驱动器是免维护的，但会有磨损。电机的碳刷会随着时间的推移而磨损。请联系您的供应商进行更换，请只使用原装备件。更换碳刷时请断开电源。如果仪器还在保修期内，请勿更换电机碳刷，以免质保失效。

分散头的消毒

- 消毒剂：使用杀菌溶液（如福尔马林、苯酚、酒精等）进行消毒。
  - 随后必须用消毒水清除消毒剂的残留物，然后进行干燥，以避免污染后续处理的样品，也防止分散头被腐蚀。
  - 请确保所有使用的化学品都能与SS 316L和PTFE兼容。
- 如果需要更彻底的消毒，那么可以选择高压灭菌（121℃）。请注意，在高压灭菌之前要对分散头先进行清洗，以确保清除所有的残留物。否则高压灭菌很容易烤干残留物。也可选择热空气消毒（160°C）代替高压灭菌。

保修

您购买的是一台符合最高工程和质量标准的原装实验室机器。根据本公司的保修规定，本机保修12个月，自发货日起算。对于保修期内的索赔，请联系您当地的供应商。您也可以将仪器直接寄给我们，并附上发票和问题的描述说明。经我们事先确认，运费将由您承担。

保修不包括部件的自然磨损，也不包括因疏忽、操作不当或未按照说明书使用和维护机器而造成的故障或损坏。

我们将保留提升和改进任何仪器的权利，对于此前出售的任何仪器，我们没有进行相应修改的义务。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