

User Manual

Simple Electronic Pipette



12301021
Ver.20191209

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1. Product Overview

A versatile, motor-driven pipetting instrument, delivers accurate and precise performance in liquid handling. Its design and operation is based on the principle of air displacement and use disposable pipette tips.

It has been tested according to ISO8655 quality management standards. In compliance with the quality control requirements of ISO8655-6 / DIN 12650, each and every pipette, fitted with original tip of the manufacturer, has been tested for gravity with distilled water (DIN / ISO3696, grade 3) at 22°C.

1.1 Specifications

It covers a wide range of volume: 0.5 - 10 μ L ; 5 - 50 μ L ; 30 - 300 μ L ; 100 - 1000 μ L

Channels	Volume Range	Increment	Tips
1	0.5-10 μL	0.01 μL	10 μL
1	5-50 μL	0.1 μL	200;300;350 μL
1	30-300 μL	1 μL	300;350 μL
1	100-1000 μL	5 μL	1000 μL

1.2 Pipette Tip

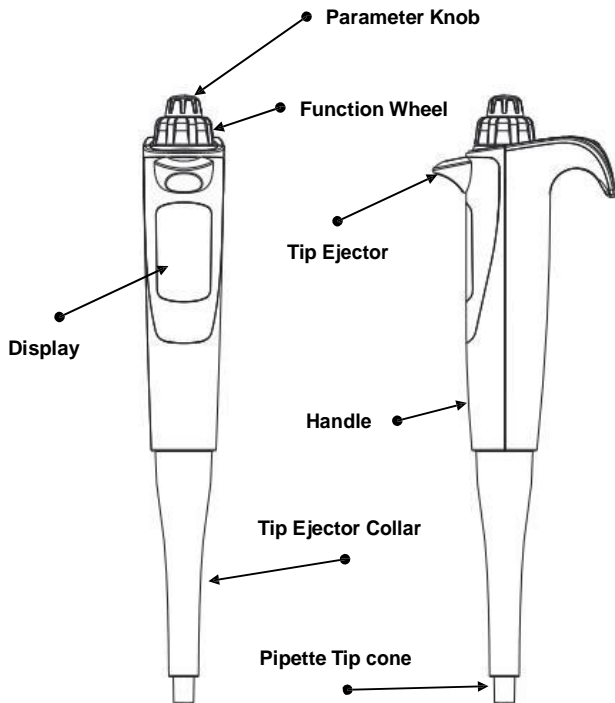
It is compatible with most universal tip brands covering full volume range.

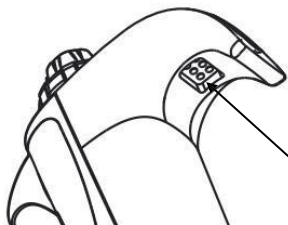
Note! Never use the pipette without a tip attached.

Contents of Package Include:

- Electronic pipette X 1
- AC Adapter X 1
- USB cable X 1
- Stand X 1
- User manual X 1
- Calibration card (ISO8655-6 / DIN12650) X 1

2. Parts Description





Stand Charging Port

Fully charged in approximate 4 hours.



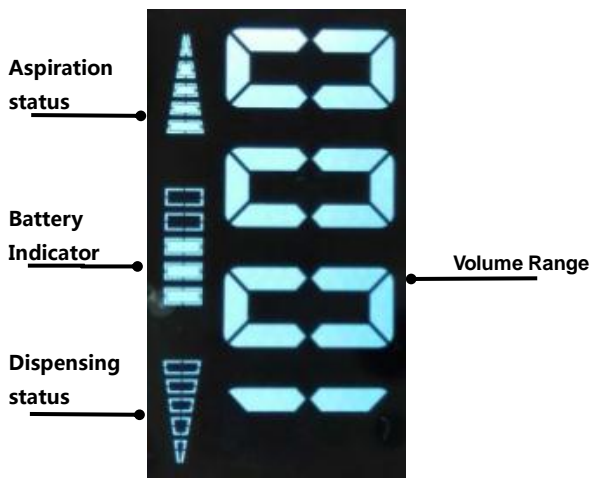
Reset Slot

Restart with the light touch of a pin.

USB-charging Port

Fully charged in approximate 4 hours.

3. Display



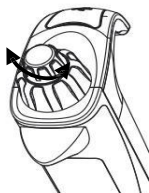
4. Operation

4.1 Power On

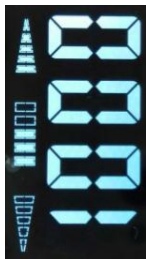
Press the **Parameter Knob** or about 2 seconds.

4.2 Volume Setting

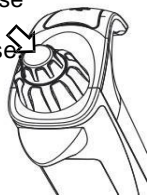
① Fast turn the **Parameter Knob**.



② Volume parameter to be blinking.



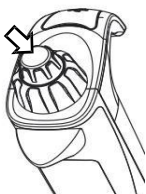
③ Turn the **Parameter Knob** anticlockwise to increase, turn clockwise to decrease. Press **Parameter Knob** to confirm.



Note! : Do volume range setup in Aspiration mode only.

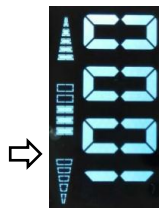
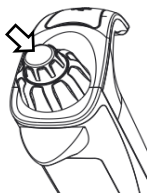
4.3 Aspiration

When upward arrow blinks, press **Parameter Knob** for Aspiration.



4.4 Dispensing

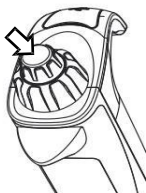
When downward arrow blinks, press **Parameter Knob** for dispensing.



4.5 Mixing

Press **Parameter Knob** until mixing activity begins.

The release of **Parameter Knob** at any time during the process of mixing will exit the mixing mode.



Note! Take the operation (100-1000 μ L) for the purpose of illustration.

Three mixing volume modes :

① If the pipetting volume is set larger than 30% of the total volume range, 30% of the maximum volume of the pipette will be mixed.

e.g. set volume: 700 μ L

actual mixing volume: 300 μ L

② If the pipetting volume is set less than 30% of the total volume range, and more than its minimum volume range, 50% of the set volume will be mixed. **e.g.** set volume: 270 μ L

actual mixing volume: 135 μ L

③ If 50% of the set volume is less than the minimum volume range, the minimum volume will be mixed.

e.g. set volume: 150 μ L

actual mixing volume: 100

4.6. Speed adjustment

Turn **Function Wheel** left and right for settings.



Include:

- ① Aspiration/Dispensing speed setting
(SP-3 speeds)
- ② Delay time setting
(DL-0.2-2.0 seconds)

Turn **Function Wheel** left and right to select Aspiration/Dispensing speed setting, turn **Parameter Knob** right or left among 3 (SP-1-3) to adjust and press for confirm.



Turn **Function Wheel** left and right to select Delay time setting, turn **Parameter Knob** right or left among 0.2-2.0 seconds (DL-0.2-2.0) to adjust and press for confirm.



Double press again to quit the setting mode.

4.7 Power off

The Electronic pipette will power off automatically after 8minites when stop use.

5. Storage

- ① Recommend storing electronic pipette on the stand in vertical position when not in use.
- ② Please every month to charging if being unused in long time , make sure there are 50% power in battery at least.
- ③ During storage periods at constant temperature and humidity, the recommended temperature range is from 0-40°C and humidity no more than 80%.

6. Care and Maintenance

By cleaning your electronic pipette before and after each use, tip connector in particular, its functionality and performance can be ensured.

Note! Check the performance of the pipette every three months. Performance test is recommended to be carried out after each in-house care and maintenance.

6.1 Cleaning the Outer Surface

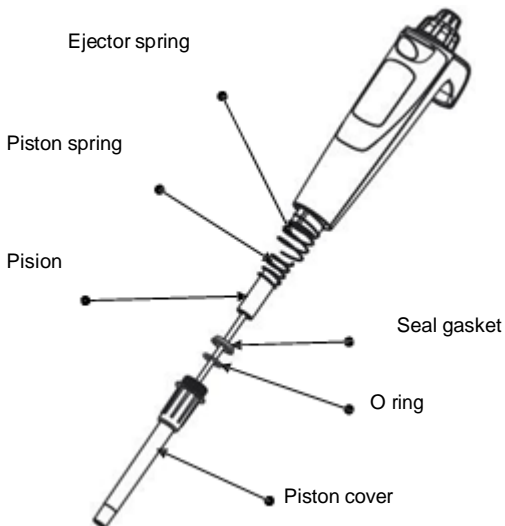
Spay the outer surface with a dedicated pipette detergent or 75% ethanol. Wipe with lint-free cloth.

Note! Please consult with your nearest distributor for the cleaning with other detergent or liquids.

ANY WARRANTY WILL, HOWEVER, BE DEEMED AS VOID IF THE FAULT IS FOUND TO HAVE BEEN CAUSED BY UNAUTHORIZED CLEANING.

6.2 Sterilizing the Inner Parts

The entire body of the electronic pipette cannot be autoclaved. The autoclavable parts include:



Note! The unidentified parts can never be autoclaved or disassembled prior to authorization.

6.3 Disassembly Procedures

① Unscrew the tip ejector collar anticlockwise and remove it.

NOTE! THIS PART CANNOT BE AUTOCLAVED.

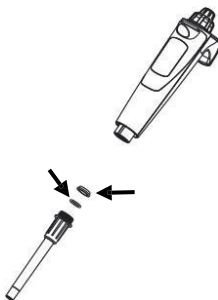


② Remove the ejector spring. Unscrew the piston cover anticlockwise and remove it.

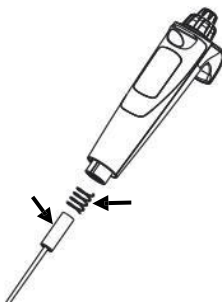


③ Separate the seal gasket and O ring from piston cover.

NOTE! MINOR PARTS FOR SAFE KEEPING PLEASE.



④ Separate the remaining piston from piston spring.



⑤ Clean the above-mentioned parts with 75% ethanol, or sterilize the parts at 121°C, 1 bar overpressure for 20 minutes.

⑥ Apply an appropriate layer of silicone grease to the O ring, seal gasket and piston. Reassembling.

Note!

① After autoclaving and reassembling, leave it to rest for 12 hours before reuse.

② Calibration is needed after each inner-part sterilization. For more information, please refer to section "Calibration and Performance Tests".

7. Calibration and Performance Tests

Calibration should take place at 20-25°C, kept constant within $\pm 0.5^\circ\text{C}$. A dedicated calibration software will write calibration values in your electronic pipette, after the distilled water has been repeatedly weighed at least five times.

Hardware needed:

- Electronic balance with readability of 0.01 mg
- Distilled water
- Pipette tip in compatible with the volume range
- X86 or X64 architecture PC pre-loaded with Windows (XP/Vista / 7/8/10 operating system)

Software needed:

- Dedicated calibration software (For more information, please contact with your nearest distributor)
- Drive program

Note! If your electronic pipette cannot work properly after calibration, please contact your nearest distributor for assistance.

8. Troubleshooting Guide

Problem	Possible cause	Solution
Remaining droplets	Incompatible tip	Use original tip
	Plastic self-lubrication of the tip is not even	
Leakage or inadequate aspiration	Tip is loose	Attach the tip firmly
	Foreign objects between tip and connector	Clean the tip cone and replace the tip
	Pipette is contaminated	Clean and grease O ring, piston and clean tip cone
	Inadequate application of silicone grease to piston or O ring	Apply silicone grease
	O ring and piston is unlocked or broken	Replace O ring
	Inappropriate operation	Follow the instructions in the User Manual

Problem	Possible cause	Solution
Leakage or inadequate aspiration	Calibration needed or huge difference of density compared with water	Recalibrate according to the instructions in the User Manual
	Pipette is broken	Send the pipette for service
Inadequate aspiration due to jammed pipette	liquids leak into the tip connector and dry.	Clean and grease O ring and piston; clean tip cone
ejector is jammed or cannot work properly	Tip connector and ejector are contaminated	Clean tip connector and ejector

10. Warranty

The electronic pipette is covered by one-year warranty against defects in workmanship and materials. Please contact us or your nearest distributor.

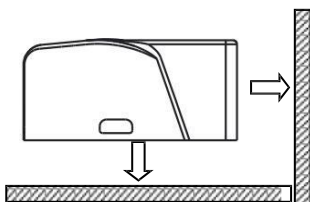
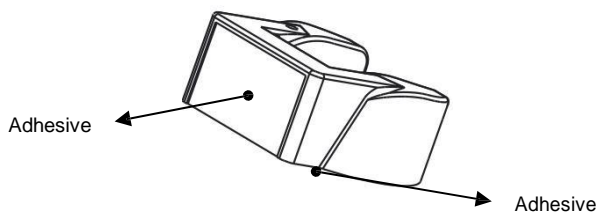
ANY WARRANTY WILL, HOWEVER, BE DEEMED AS VOID DUE TO NORMAL WEAR AND TEAR OR FOR OPERATIONS CONTRARY TO THE INSTRUCTIONS GIVEN IN THIS MANUAL.

Each and every electronic pipette has been calibrated and tested in compliance with ISO8655-6 / DIN12650 (calibration card included in the contents of delivery package) when manufactured, ensuring safe and comfortable pipetting.

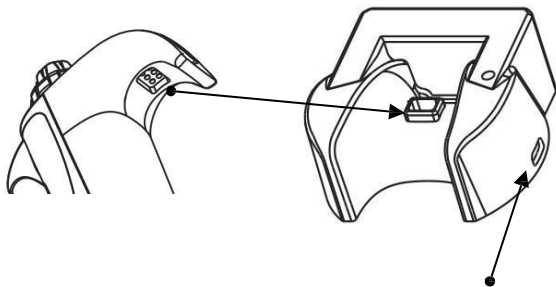
11. Accessory

11.1 Stander

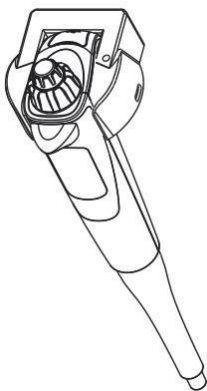
Step 1 : There are two piece of adhesive tape on the stander surface. Peel off the release paper of from the adhesive which one you want to use and paste the stander on the flat and clean surface where you want to set up the stander.



Step2 : Insert the stander charging port contact the stander. Connecting USB cable.



USB connector



产品使用说明书

简易款电动移液器



CE FC

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1. 您的电动移液器

多用途电力驱动移液装置,用于液体的精确采样和分析工作。其设计和操作基于空气置换的原理,使用一次性移液吸头。

依照 ISO8655 标准进行了质量测量,根据 ISO8655-6 / DIN 12650 质控要求,在 22°C条件下使用蒸馏水 (DIN / ISO3696 - 3 级) 和制造商的原装吸头对每支进行重力测试。

1.1 规格

量程范围分为 0.5 - 10 μ L ; 5 - 50 μ L ; 30 - 300 μ L ; 100 - 1000 μ L

通道	移液量程	移液增量	吸头规格
1	0.5-10 μ L	0.01 μ L	10 μ L
1	5-50 μ L	0.1 μ L	200;300;350 μ L
1	30-300 μ L	1 μ L	300;350 μ L
1	100-1000 μ L	5 μ L	1000 μ L

1.2 移液吸头

覆盖所有量程的各类吸头，可配套使用。

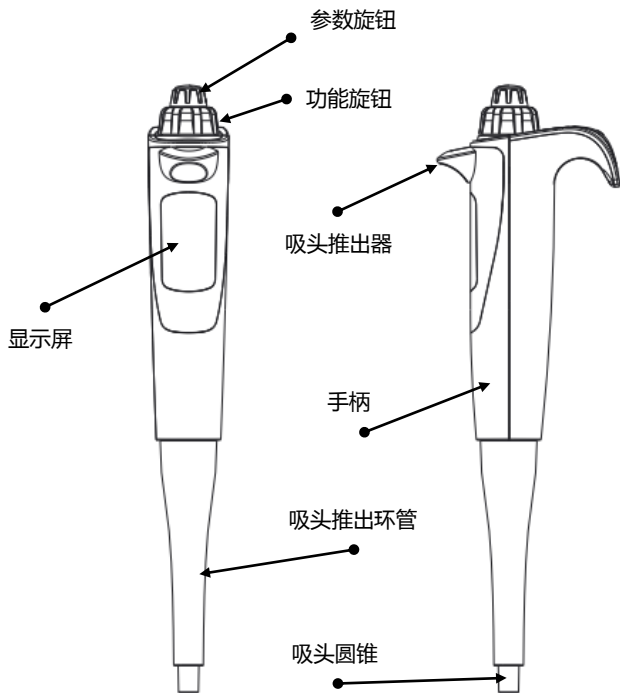
注意：在未装吸头的情况下，不要进行移液操作！

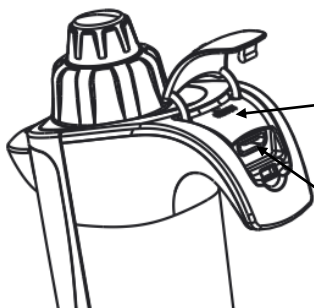
包装内容

包装中应该包含以下物品：

- 电动移液器主机 X 1
- 电源适配器 X 1
- USB 数据线 X1
- 简易枪架 X1
- 说明书 X 1
- 校准卡 (根据 ISO8655-6 / DIN12650) X 1

2.部件说明



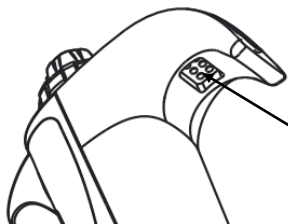


重置孔

用针状物轻触即可实现重启

USB 充电接口

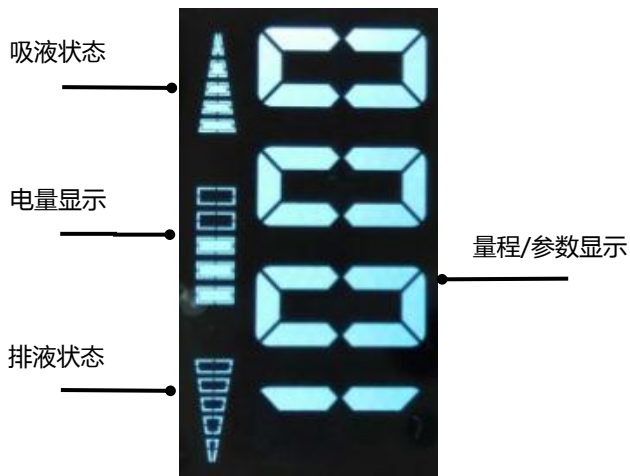
USB 充电接口，充满时间大约为 4 小时



座充接点

使用枪架进行充电时使用，充满时间大约为 4 小时

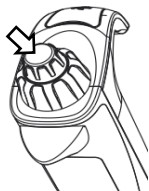
3. 显示屏说明



4. 电动移液器操作

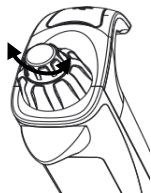
4.1 启动电动移液器

长按**参数旋钮**大约 2 秒。

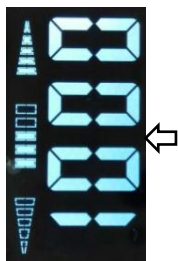


4.2 设置量程

① 快速左右旋转**参数旋钮**，进入吸排液量程调节。



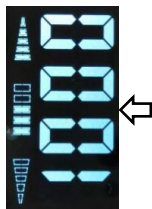
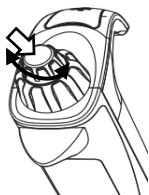
② 此时**量程**项闪烁。



③ 逆时针旋转**参数旋钮**数

值增加，顺时针旋转则减少。

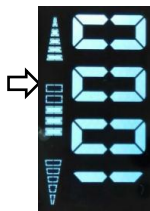
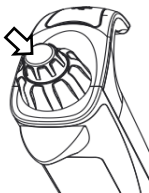
单击**参数旋钮**确认。



注意：只有在吸液模式下，才可进行
量程设置。

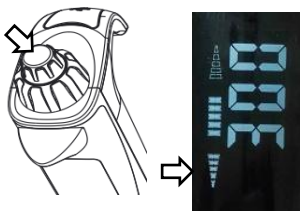
4.3 吸液操作

向上箭头闪烁，提示可以
进行吸液操作，点按**参数
旋钮**，进行吸液。



4.4 排液操作

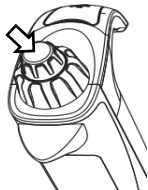
向下箭头闪烁，提示可以进行排液操作，点按**参数旋钮**，进行排液。



4.5 混匀操作

长按**参数旋钮**不放，进入混匀模式。

在混匀工作进行中的任意时刻松开**参数旋钮**，会退出混匀模式。



注意：以下说明以量程 100-1000 μ L 为例。

混匀操作有三种混匀量模式：

① 如果您设定的移液量大于本支移液器总量程的 30%，实际混匀工作将以最大量程的 30%进行。

例：设定量为 700 μ L，实际混匀量以 300 μ L 进行。

② 如果您设定的移液量小于本支总量程的 30%，但是大于最小量程。实际混匀量将以您的设定量的 50%进行。

例：设定量为 270 μ L，实际混匀量以 135 μ L 进行。

③ 如果您设定的移液量的 50%，小于本支移液器的最小量程。实际混匀量将以最低量程进行。

例：设定量为 150 μ L，实际混匀量以 100 μ L 进行。

4.6 吸/排液/回吸速度调整

左右旋转**功能按钮**进入速度设定模式，此时速度项闪烁。



速度项包括：

① 吸/拍液速度（SP 3 速可选）

② 回吸速度 (DL 0.2-2 秒可选)

左右旋转**功能旋钮**至吸拍液速度设定模式，
左右旋转**参数旋钮**在三档速度
(SP-1/2/3) 中进行选择，选好速度
后单击**参数旋钮**确认。



左右旋转**功能旋钮**至吸液速度设定模式，左右
旋转**参数旋钮**在 0.2-2.0 秒中进行选择，单击
参数按钮确认，后双击即可退出设定模式。



4.7 关机

注：将在闲置无操作 8 分钟后自动关机。

5. 储放

- ① 电动移液器如果不使用，建议将其竖直挂在枪架上。
- ② 如果长期不使用，请保证每个月为其充一次电量，确保其有至少 50% 的电量。

③ 存放在恒温恒湿的环境中，温度范围为 0-40°C，湿度不大于 80%。

6. 保养

为使您的电动移液器保持在最佳状态，应在每次使用前和
后检查是否清洁，尤其是要注意吸头圆锥部分。

注意：定期（建议每 3 个月）检查移液器性能，实验室内
进行维修和保养后也必须进行性能测试。

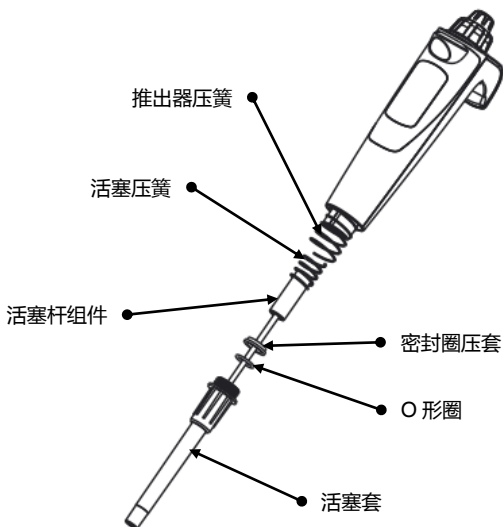
6.1 表面清洁

在表面喷洒移液器专用清洗液或酒精(75%浓度)，用软布
进行擦拭即可。

注意：如果您需要使用其他清洁剂或者液体进行清洁工
作，请先与离您最近的经销商进行咨询。
如果进行未经认可的清洁操作，由此引起的故障损坏，不
在保修范畴内。

6.2 内部结构消毒处理

电动移液器不能进行高温整体消毒，可进行消毒部件如下图所示：

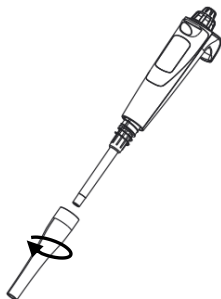


注意：其它未标识部件**切勿**进行高温消毒或自行拆卸。

拆卸步骤：

① 逆时针旋转**吸头推出器环管**并取下。

注意：此部件为非高温消毒部件

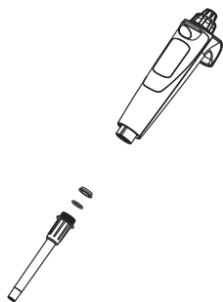


② 取下**推出器压簧**，逆时针旋转**活塞套**并将其取下。

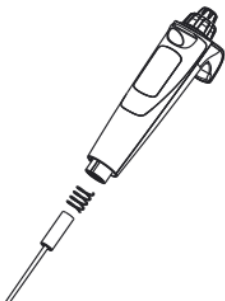


③ 将**活塞套**上的**密封圈压套**和**O形圈**分离开。

注意：微小部件，妥善保管



④ 将余下的部件**活塞杆组件**和**活**
塞压簧分离开。



⑤ 至此，可消毒部件拆卸完毕。各个部件可以用酒精(75%浓度)或者进行 121℃，20 分钟的标准消毒处理。

⑥ 消毒清洁工作完成后，在 O 形圈，密封圈压套和活塞杆组件上涂抹适量的硅脂。逆向按照拆卸流程操作装回即可。

注意：

① 在进行高温消毒并完成组装后，请静置 12 小时后再进行使用。

② 每次在进行内部消毒处理后，需要进行校准，相关信息请参考第 8 节“校准和性能测试”。

7. 校准和性能测试

电动移液器的校准是在 20-25°C 的环境中，进行至少重复 5 次称量移液蒸馏水的重量，通过专用校准软件将校准数值写入到您的电动移液器中。

校准需要准备的硬件设备如下：

- 十万分之一的电子天平
- 蒸馏水
- 与您的量程适用的移液吸头
- 预装 windows (XP/Vista/7/8/10) 操作系统的 X86 或 X64 架构的 PC

校准需要准备的软件如下：

- 专用校准软件
(软件的详细情况请与离您最近的经销商联系)

注意：

如果您的电动移液器无法通过校准或多次校准后无法实现正常工作，请与离您最近的经销商联系。

8. 故障排除

问题	可能原因	解决方法
吸头内有残液	吸头不适配	使用原装吸头重装新吸头
	吸头塑料润性不均一	
漏液或液量太少	吸头安装不正确	装紧吸头
	吸头和管嘴圆锥间有异物	清洁管嘴，重装新吸头
	移液器被污染	清洁并润滑 O 形环和活塞，清洁吸头圆锥
	活塞或 O 形环硅油不够	涂上硅油
	O 形环与活塞未扣好或损坏	更换 O 形环
	操作不当	认真按说明书操作
	需要校准或密度与水差异大	根据说明书重新校准
	移液器被损坏	送修
移液器阻塞吸液量太少	液体渗入吸头圆锥并干燥	清洁并润滑 O 形环和活塞，清洁吸头圆锥
吸头推出器卡主或运动不畅	吸头圆锥/吸头推出器环管被污染	清洁吸头圆锥和吸头推出器环管

9. 质保信息

电动移液器质保为一年。在此期间，如出现任何质量问题，可随时与我公司或者离您最近的经销商联系。

对于正常的使用损耗或不按照本手册指导操作造成的损坏，不在保修范围内。

每支电动移液器在出厂的时候都经过遵照 ISO8655-6 / DIN12650 标准的校准（校准卡请见包装盒内附件）和严格的质量检测，确保您购买的电动移液器可以安心使用。