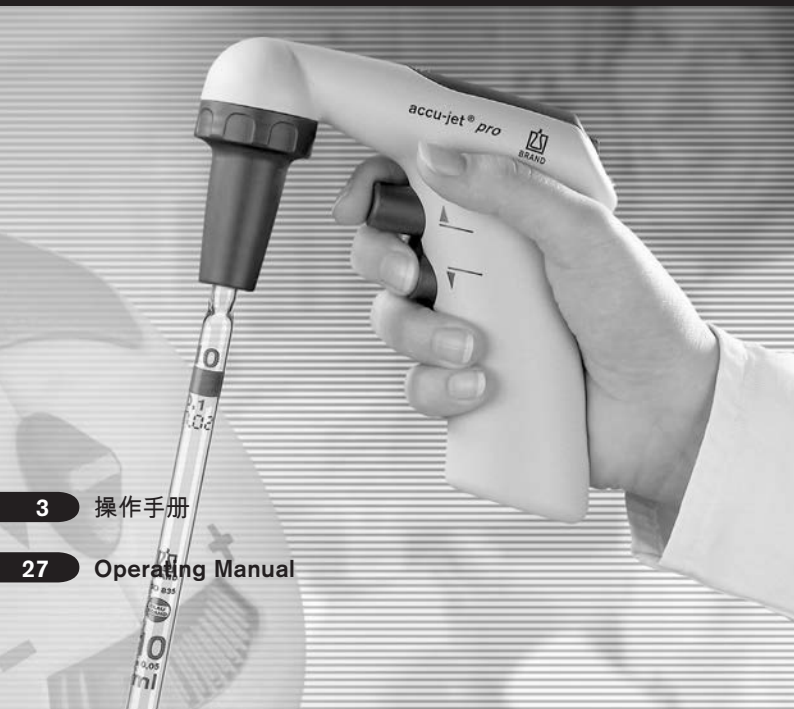
移液产品 · 简单操作！

BRAND

accu-jet® *pro*

电动移液管助吸器

F I R S T C L A S S · B R A N D



3 操作手册

27 Operating Manual

EG-Konformitätserklärung
EC-Conformity Declaration

Das bezeichnete Gerät entspricht den einschlägigen Anforderungen der aufgeführten EG-Richtlinien und Normen. Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller. Bei einer nicht mit uns abgestimmten Änderung des Gerätes verliert die Erklärung ihre Gültigkeit.

The device named below fulfills the relevant fundamental requirements of the EC directives and standards listed. This declaration of conformity is issued under the sole responsibility of the manufacturer. In case of unauthorized modifications to the device, the declaration becomes invalid.

Gerätebezeichnung / Device name:	accu-jet® pro inkl. Netzteil accu-jet® pro incl. charging adapter
Gerätetyp / Device type:	alle baugleichen Varianten all constructional identical variants
Hersteller / Manufacturer:	BRAND GMBH + CO KG
Adresse / Address:	Otto-Schott-Str. 25 97877 Wertheim · Germany

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union: **The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:**		**Harmonisierte Normen:** **Harmonized standards:**
RoHS II	2011/65/EU: 2011/06	EN 50581: 2012

Weitere berücksichtige Richtlinien: **Other considered directives:**		**Harmonisierte Normen:** **Harmonized standards:**
EMV EMC	2014/30/EU: 2014/02	EN 61326-1:2013
Niederspannung LVD	2014/35/EU: 2014/02	EN 60950-1:2006 (2nd Ed.) A11:2009; A1:2010; A12:2011+A2:2013 EN 61010-1:2010; (EN 61010-1:2013 - not harmonized)

Werthelm, 03. Februar 2016 / February 03, 2016 # 01.01.01.02

Peter Mahler
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Quality Management

BRAND

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Harmonisierungsvorschriften, beinhaltet jedoch keine Zusicherung von Eigenschaften.
This document declares the accordance with the named harmonized regulations, but does NOT assure specific properties.

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该设备可能与有害的物质、操作和设备一起使用 。本手册不可能提示这些应用中所有的潜在安全风险。用户有责任在使用前咨询并建立恰当的安全与健康规程，并决定规章限制的适用性。

⚠ 请仔细阅读下列说明！

1. 所有使用者在使用该设备之前必须阅读并理解本操作手册。
2. 遵循有害防护与安全指导的通用规章；比如，穿着防护服，佩戴防护镜与手套。
3. 请遵守试剂供应商提供的所有安全注意事项。
4. 绝不可以在有爆炸危险的环境中使用本仪器。不可移取易燃液体。
5. 本仪器仅可用于液体移取，所移液体需严格符合“操作限制”的规定(参见第7页)。如有疑问，请联系厂方或者供应商。
6. 请始终以对用户及他人均安全的方式进行操作。仅将样品分配至合适的容器，防止飞溅。
7. 操作时请勿过度用力!
8. 请仅使用原厂配件。切勿试图对本仪器进行任何技术改造。不要对本仪器进行超过操作手册描述范围的拆卸。
9. 使用前请检查仪器有无可见损伤。如果仪器在操作时有潜在的故障迹象，请立即停止移液。咨询本手册的“故障诊断”参见 22 页)，有必要的话请联系供应商。
10. 为镍氢电池充电，请仅适用原装 AC 电源适配器。
11. AC 电源适配器须防止受潮。仅可使用在本设备上。

12. 仅授权服务人员可对本设备提供维修或者服务。

13. 请勿使用其他不可充电或者可充电电池替换原装电池（参见第 14 页）。

警告！

该仪器或电池使用不当（短路、机械损坏、过热，错误的 AC 电源适配器等）在极端情况下可能会导致电池爆炸。

功能与使用限制

本设备设计用于辅助玻璃或者塑料材质，量程范围从 0.1 ml 至 200 ml，吸管外径 < 9.2 mm，用于量取液体的刻度或者单线移液管进行吸液与排液工作。在正确使用本设备时，移取液体将仅与移液管接触。

CE

此标志证明本产品符合 EEC 指令要求并通过了相关指标的测试。

使用限制

本设备设计用于移取液体，请遵循下列物理极限：

- 温度范围 从 +10 °C 至 +40 °C (从 50 °F 至 104 °F)
  (仪器与试剂)
- **蒸汽压小于** 500 mbar。
  试剂蒸汽压大于 300 mbar 时请慢速吸取，以防液体沸腾。
- 液体密度最高至 9.0 g/cm^3

禁止操作

不可将该设备用于蒸汽具有腐蚀性或者攻击硅或 EPDM 材质的液体。

本设备并非针对巴斯德吸管的使用而设计。

警告！

不可在具有爆炸危险的环境中使用该设备或者进行充电。不可移取高度可燃液体（比如，乙醚、丙酮或者其他闪点低于 0 °C (32 °F) 的液体)。

电池规格

镍氢电池 2,4 V/730 mAh

储存条件

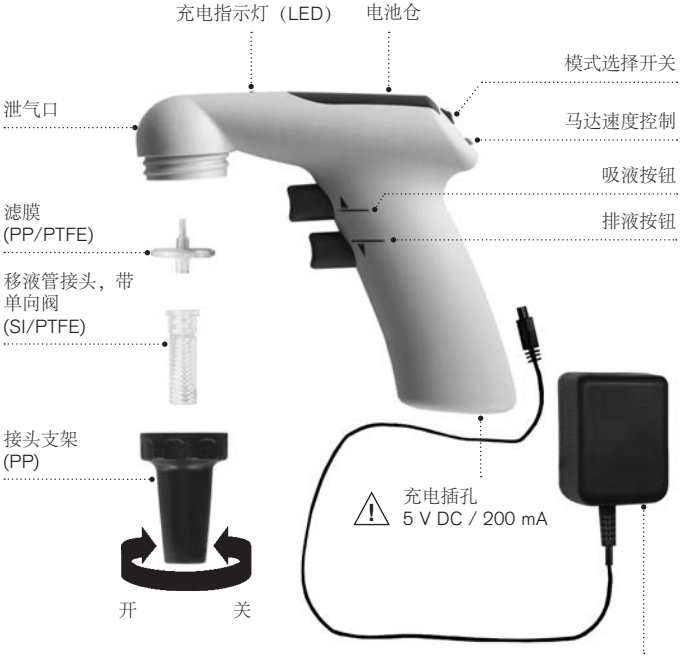
请将设备存放于洁净，阴凉，干燥的地方。

储存温度:

-20 °C 至 +50 °C

(-4 °F 至 +122 °F).

操作元件

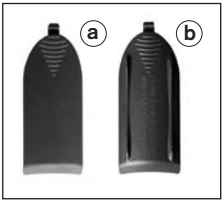


输入： AC 100 - 240 V; 50/60 Hz
输出： DC 5 V/200 mA

检查包装内容：

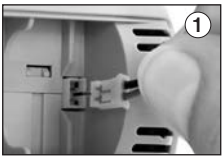
确认您的包装盒内包含：

- 移液管助吸器
- 镍氢电池
- 2 个电池仓盖
  a) 光滑
  b) 带脊，用于将设备倒置安放于实验台上
- AC 电源适配器
- 2 个 0.2 µm 零备滤膜滤器
- 壁挂架
- 操作手册



组装

1. 手握电池插头电线，确认插头与插座对齐，然后将其插入插座。将插头牢牢推入插座，直至听到插头卡到位的声音。将电池放入电池仓。



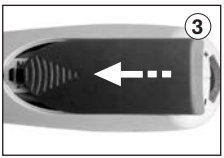
2. 选择电池仓盖：

a) 光滑

b) 带脊，用于将设备倒置安放于实验台上(参见第 10 页)。

3. 关闭电池仓。

4. 为电池充电。充电时间为 4 个小时（参见第 14 页）



悬挂·桌面放置

将设备悬挂于壁挂架进行储存。

安装壁挂架

壁挂架粘在雌雄贴上，便于取下清洁。使用雌雄贴时，安装表面必须光滑，洁净，无油。
使用 50 % 异丙醇/水溶液清洁安装表面。或者，壁挂架可以用两个螺丝固定在墙上。

桌面放置

如果安装了带脊的电池仓盖，可将设备倒置安放于实验台上。

注意：

插有移液管时决不可倒置设备。

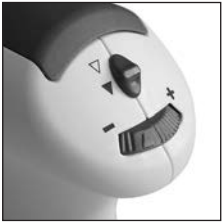
选择模式

向上拨:

▽ **重力排液**

向下拨:

▼ **吹出**
(使用马达)

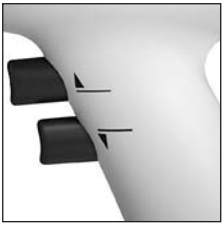


调节马达速度

转动拨轮，可连续调节马达速度从最大值 (+) 至最小值 (-)。建议对于量程较大的移液管使用最大速度设置，对于量程较小的移液管使用稍低一点的速度。

移液速度控制

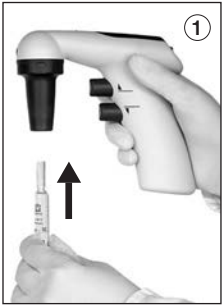
通过在移液按钮上施加的按压力度不同，可对速度进行连续调节，最大至速度控制拨轮设置的速度值。按压上部的吸液按钮进行吸液操作，按压下部的排液按钮进行排液操作。



1. 安装移液管

尽可能手持移液管上部，小心将其紧紧插入接头。

移液管安装牢固之后，应始终垂直握持该设备，移液管尖向下。



警告！

确保移液管插入接头安装牢固。请勿过度用力。 细薄的移液管极易破碎。避免受伤!

2. 吸液

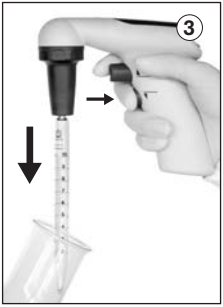
将移液器吸头浸入液体。缓缓按压上部的吸按钮吸入液体，至凹液面稍高于要求刻度。

注意！

避免对移液管过度吸液。

3. 调节体积

使用合适的无尘软布擦拭移液管排液头。慢慢按下部的排液按钮进行分液，直至将凹液面正好调解至所需体积。



4. 排液

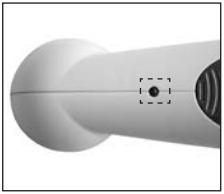
慢慢按下部的排液按钮。当模式开关设置于马达吹出位置时，排液速度取决于施加在排液按钮上的压力大小和速度控制拨轮的设置。

警告！

请仅使用原装 AC 电源适配器！使用其他 AC 电源适配器可能会损坏设备与电池。

一块充满电的镍氢电池可支持连续8小时不间断的移液操作。LED 灯闪烁提醒需要充电。

充电指示灯



- LED 灯灭：
  电量充足
- LED 灯慢速闪烁：
  剩余电量可以支持最多约 2 小时的移液；
  建议充电。
- LED 灯快速闪烁：
  停止移液操作，进行充电。

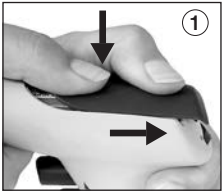
充电步骤

1. 充电时的温度范围：
   +10 °C 至 +35 °C (+50 °F 至 95 °F)
2. AC 电源适配器刚连接上时，设备上的 LED 灯保持长亮。
3. 充电 4 小时之后，AC 电源适配器自动切换至脉冲长期充电模式（LED 灯每 15 秒闪烁一次)。

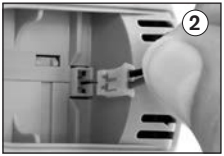
提示：

– 充电系统设计用来防止对电池过度充电，并最大限度地减少电池记忆效应。为保持电池容量，最好只在 LED 灯慢速或快速闪烁提醒需要充电时，才对电池充电。
– 该设备可在充电时操作。
– 若充电过程中 LED 灯不亮，请参见"故障诊断"（第 22 页)）。

1. 打开电池仓，按住电池仓盖上的纹路，同时将电池仓盖向后滑动。



2. 取下电池：手握电池插头电线，将其从插座中轻轻拔出。



警告！

请仅使用原装附件（参见第 21 页）。
请勿使用其他不可充电或者可充电电池替换原装电池。
使用错误的电池或电池使用不当（短路、机械损坏、过热等）可能会导致电池爆炸。

3. 手握新电池的插头电线，将插头插入插座，直至听到插头卡到位的声音。

4. 将电池放入电池仓。

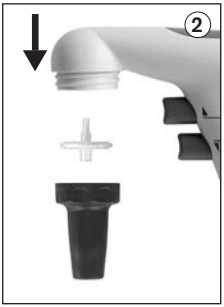
偶尔用湿布擦拭设备外壳。
若使用正确，该设备无需维护。
该仪器可耐受通常的紫外灭菌灯照射。UV紫外照射可能导致一些颜色改变。
滤膜滤器，移液管接头与接头支架可于121 °C (250 °F)，2 bar (30 psi）依照 DIN EN 285 进行至少 15 分钟高温高压湿热灭菌。
高温灭菌之前，各部件需仔细清洁（参见第 17,18 页)。

更换滤器与清洗接头

仅在发生了过度吸液或者吸液能力受损才有需要。

警告！

请佩戴防护手套和防护镜。防止污染!



1. 拔出移液管。
2. 旋下接头支架。
3. 拔出滤膜滤器。
4. 向上推接头，将接头从接头支架上取下。
   单向阀应仍在接头内!

5. 如需清洗带有内置单向阀的接头，请使用装有合适兼容溶剂（如：水）的洗瓶小心进行冲洗。
吹出液体，并完全晾干。

6. 将新滤芯较粗端朝下放入接头内（较小的锥形端朝上)。

7. 整个移液管接头包含滤膜滤器，可于121 °C (250 °F)，2 bar 依照DIN EN 285进行高温高压湿热灭菌。

8. 按相反步骤重新组装，并进行泄漏测试。

提示：

用户有责任确认高压灭菌的有效性。并非所有的滤膜滤器都兼容。仅可使用原厂推荐的附件。每个设备都配有一个 0.2 µm 滤芯（红色标识)。滤膜可在 121 °C (250 °F) 条件下进行5次高温高压灭菌。滤膜的孔径为0.2 µm（用于细胞培养），足以满足B级误差极限的要求。如需达到A级精准度，需要使用 3 µm 滤芯。滤膜孔径大使得重力排液的气流更佳。(零备件 第 21 页)。

泄漏测试

设定凹液面之后，液体不应从移液管内滴出，直至打开阀门。
若移液管发生滴漏，请参见“故障诊断”（第 22 页）。

accu-jet® pro 电动移液管助吸器，含 AC 电源适配器 (100 - 240 V; 50/60 Hz)，包含 2 个电池仓盖，2 个备用滤膜（0.2 µm），壁挂架与操作手册。

颜色*	深蓝色 货号	紫红色 货号	绿色 货号	宝蓝色 货号
含AC电源适配器：				
适合欧洲大陆/中国地区使用	263 00	263 01	263 02	263 03
英国/爱尔兰地区	263 10	263 11	263 12	263 13
美国地区	263 30	263 31	263 32	263 33
澳大利亚地区	263 20	263 21	263 22	263 23
日本地区	263 40	263 41	263 42	263 43
不含AC电源适配器	263 04	–	–	–

* 颜色指移液管接头支架、电池仓盖、移液按钮、模式选择开关和速度控制拨轮上的颜色。设备本身为灰色。

零备滤膜滤器

	包装规格	货号
0,2 µm, 灭菌（红色标识）	1个/塑封包装	265 30
0,2 µm, 未灭菌	10个/PE袋	265 35
3 µm, 未灭菌	1个/塑封包装	260 52
3 µm, 未灭菌	10个/PE袋	260 56

AC电源适配器

输入： AC 100-240 V; 50/60 Hz
输出： DC 5 V DC/200 mA

型号	货号
适合欧洲大陆/中国地区使用	266 01
英国/爱尔兰地区	266 02
美国地区	266 03
澳大利亚地区	266 04
日本地区	266 05

壁挂架，灰色

货号	265 40

雌雄贴，2 组

货号	265 42

镍氢电池

2,4 V/730 mAh

货号	266 30

内置单向阀的硅胶接头

货号	265 08

接头支架

	货号
深蓝色	266 52
紫红色	266 53
绿色	266 54
宝蓝色	266 55

问题	可能的原因	处理措施
吸液能力受损	马达速度被调低	增加马达速度（第11页）
	单向阀关闭	将模式选择开关设置为“马达吹出”并按排液按钮进行吹出（第13页）
	滤器或者单向阀脏污	清洗和/或更换单向阀（第17页）
移液管滴漏	滤膜滤器位置不正确	正确安装滤器（第18页）。
	移液管接头或者移液管损坏	更换接头或者移液管（第17页）。
移液管无法安装稳妥	移液管接头脏或者损坏	清洗移液管接头并晾干，和/或更换新接头（第 17页）。
连接AC电源适配器之后，设备上的LED指示灯状态为闪烁或不亮	电池插头没有牢固插入插座	将电池插头牢固插入插座(第9页)。
	错误的AC电源适配器	请仅使用原装AC电源适配器(第21页)。
	电池/AC电源适配器故障	更换电池/AC电源适配器
	设备故障	送修（第23页)。
电池无法充电	电池问题	更换电池（第16页)。
设备不工作	内部错误（执行重启）	拔出电池插头，按一个移液按钮10秒。然后再次插入电池（第9页)。

如果参照”故障诊断“部分的建议无法解决您的问题，请联系您的授权经销商或者直接联系厂方。

仪器送修

重要！ 未经同意运输有毒害的物品是违反联邦法律的。

- 请仔细完整地清洁仪器并去除污染。
- 必须附上故障与使用试剂的准确描述。 如果缺失使用试剂的相关信息，仪器将不能得到维修。
- 运输费用与风险由发送者承担。

除美国与加拿大外：

- 填写"无健康危害申明"并发给您的供应商或生产商。向您的供应商或生产商索要此表格。此表格可在www.brand.de下载。

在美国与加拿大：

- 在寄回仪器之前联系BrandTech Scientific, Inc. 获取返修的授权号码。
- 仅接受寄回清洁的并去除污染的仪器，必须附上返修授权号码并粘贴在外包装显眼的位置，寄回返修授权号码对应的地址。

BRAND GMBH + CO KG
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www.brand.co.in

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室。200030（中华人民共和国）

电话: +86 21 6422 2318
传真: +86 21 6422 2268
电子邮件: info@brand.cn.com
www.brand.cn.com

我们不能承担由于不当拿取，使用，服务，操作或未授权的仪器维修产生的结果，我们同样不能承担由于正常易损件如活塞，密封垫圈，阀门的磨损或者玻璃破损而产生的结果，我们也不能承担由于不按照操作手册指导的操作而产生的结果。我们不能承担由于进行任何操作手册未描述的操作与使用或由于非原装配件的使用而产生的结果。

美国与加拿大
担保信息请看www.brandtech.com.

右侧的标志代表电池与电子设备在寿命终结后须分别处置（不可与生活垃圾混合）。

- 根据欧洲议会 2002/96/EC 指令和 2003 年 1 月 27 日的废弃电子电气设备指令 (WEEE)，电子设备应依据国家有关处置法规进行处置。
- 电池含有对环境与人体健康有害的物质。因此根据根据欧洲议会 2006 年 9 月 6 日关于废弃电池的 2002/96/EC 指令，电池应依据国家有关处置法规进行处置。只有在完全放电之后才能丢弃。

警告！

不可短路电池进行放电！

如有技术变更，恕不另行通知。
对于印刷或排版错误，我方不承担任何责任。

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Safety Instructions

This instrument may sometimes be used with hazardous materials, operations, and equipment. It is beyond the scope of this manual to address all of the potential safety risks associated with its use in such applications. It is the responsibility of the user of this instrument to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

⚠ Please read the following carefully!

1. Every user must read and understand this operating manual before operation.
2. Follow general instructions for hazard prevention and safety instructions; e.g., wear protective clothing, eye protection and gloves.
3. Observe all specifications provided by reagent manufacturers.
4. Never use the instrument in an atmosphere with a danger of explosion. Highly flammable liquids must not be pipetted.
5. Use the instrument only for pipetting liquids, with strict regard to the defined limitations of use. Observe operating exclusions (s. page 31)! If in doubt, contact the manufacturer or supplier.
6. Always use the instrument in such a way that neither the user nor any other person is endangered. Avoid splashes. Only use suitable vessels.
7. Never use force on the instrument!
8. Use only original manufacturer's accessories and spare parts. Do not attempt to make any technical alterations. Do not dismantle the instrument any further than is described in the operating manual!

9. Always check the instrument for visible damage before use. If there is a sign of a potential malfunction, immediately stop pipetting. Consult the 'Troubleshooting' section of this manual (see page 46), and contact the manufacturer if needed.
10. Only the original AC adapter can be used for recharging of the nickel-metal hydride battery.
11. The AC adapter has to be protected against moisture and must be used only for this instrument.
12. Only authorized service personnel may repair or service the instrument.
13. The battery must not be replaced with non-rechargeable batteries or rechargeable batteries of other manufacturers (s. page 38).

Warning!

Improper use of the instrument or the battery (short-circuit, mechanical damage, overheating etc.) may cause the explosion of the battery.

Function and Limitations of Use

The instrument is designed to assist the filling and dispensing of graduated and volumetric pipettes of glass or plastic in the volume range of 0.1 ml to 200 ml with a suction tube outer diameter < 9.2 mm for measuring liquids. If the instrument is used correctly, the pipetted liquid will only contact the pipette.

CE

This sign certifies that the product meets the requirements of the EEC directive and has been tested according the specified test methods.

Limitations of Use

The instrument is designed for pipetting liquids, observing the following physical limits:

- from +10 °C to +40 °C (from 50 °F to 104 °F) (of instrument and reagent)
- Vapor pressure up to max. 500 mbar. Aspirate slowly above 300 mbar, in order to prevent the liquid from boiling.
- Density up to 9.0 g/cm^3

Operating Exclusions

Never use the instrument with liquids whose vapors have a corrosive effect or attack the materials silicone or EPDM.

The instrument is not designed for Pasteur pipettes.

Warning!

Never use or recharge the instrument in an atmosphere with danger of explosion. Highly flammable liquids (e.g., ether, acetone and other liquids with a flash point below 0 °C (32 °F)) must not be pipetted.

Battery Specifications

Battery Pack, NiMH
2.4 V/730 mAh

Storage Conditions

Store the instrument and accessories only in cleaned condition in a cool and dry place.

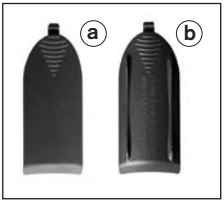
Storage temperature:
-20 °C to +50 °C
(-4 °F to +122 °F).

Operating Elements

Is everything in the package?

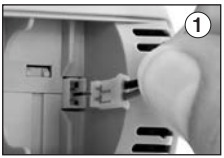
Confirm that your package includes:

- Pipette controller
- Nickel-metal hydride battery
- 2 battery compartment covers
  a) smoothly rounded
  b) with ridges to place the instrument inverted on the bench
- AC adapter
- 2 spare membrane filters 0.2 µm
- Wall support
- Operating manual



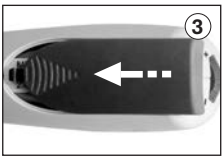
Assembly

1. Grip battery plug by the wire, confirm alignment of the plug and insert it in the socket. Push it firmly into the socket until you can hear it snap into place. Place battery in compartment.



2. Select battery compartment cover:
   a) smoothly rounded
   b) with ridges for resting the instrument inverted on the bench (s. page 34).

3. Close battery compartment.



4. Recharge the battery. Charging time is 4 hours (s. page 38).

Wall support/Inverted bench placement

Place the instrument in the wall support for storage.

Mounting the wall support

The wall support is attached with snap tapes to permit easy removal for cleaning purposes. To use the snap tapes, the mounting surface must be smooth, clean and grease-free. Prepare the surface for mounting by cleaning with a 50% solution of isopropanol/water. Alternatively, the wall support can be attached to the wall with two screws.

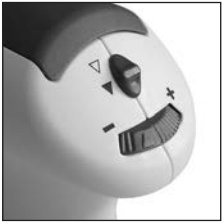
Inverted bench placement

If the cover with ridges is mounted, instrument can be placed inverted on the bench.

Attention!

Never place the instrument inverted on the bench with a pipette inserted.

Select mode



Switch up:

▽ **Gravity-delivery**

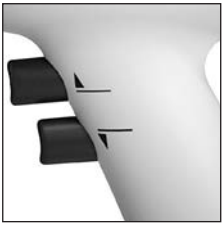
Switch down:

▼ **Blow-out (with motor power)**

Adjust motor speed

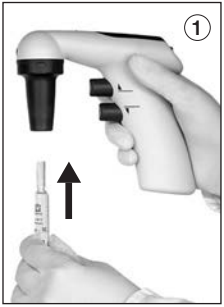
Maximum motor speed is continuously adjustable from maximum (+) to minimum (-) by turning the thumbwheel. We recommend using the maximum speed setting for larger volume pipettes and a slower speed setting for lower volume pipettes.

Pipetting speed control



The amount of pressure on the pipetting buttons provides continuously variable speeds up to the rate set by the speed controller.
Press upper pipetting button for filling and lower button for dispensing.

1. Attach the pipette



Hold the pipette as near to its upper end as possible, and carefully insert it into the adapter until it fits tightly.

Once the pipette has been securely attached, always hold the instrument in a vertical position, tip down.

Warning!

Be sure that the pipette fits tightly into the adapter. Never use force. Thin pipets are particularly liable to break. Avoid the risk of injury!

2. Filling

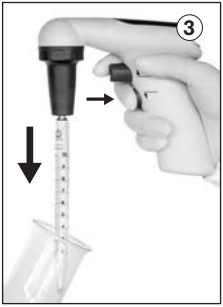
Immerse the pipette tip into the liquid. Slowly press the upper pipetting button and fill the pipette so that the meniscus is slightly above the mark desired.

Attention!

Do not overfill the pipette.

3. Adjust the volume

Use suitable lint-free tissue to wipe the pipette tip.
Slowly press the lower button and dispense liquid until the meniscus is adjusted exactly to the desired volume.



4. Dispensing

Slowly press the lower pipetting button. The dispensing speed is dependent on the amount of pressure on the pipetting button, as well as the setting of the speed controller, when the mode switch is in the motor powered delivery position.

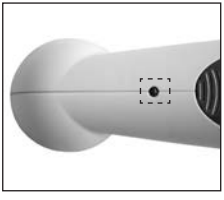
Recharging the battery

Warning!

Use original manufacturer's AC adapter only! Using a different AC adapter can damage both the instrument and the battery.

One full charge of the nickel-metal hydride battery allows 8 hours of non-stop pipetting. A flashing LED indicates the need for recharging.

Recharging indicator



- LED off:
  battery charge is sufficient
- LED flashes slowly:
  remaining battery charge is sufficient for a maximum of two hours of pipetting; charging of battery is recommended
- LED flashes quickly:
  finish pipetting activity and charge battery

Recharging procedure

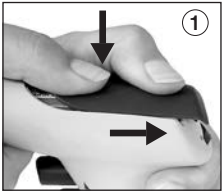
1. Temperature range for recharging: +10 °C to +35 °C (+50 °F to 95 °F)
2. When the AC adapter is initially connected, the LED on the instrument lights continuously.
3. After 4 hours of charging, the AC adapter switches to a pulsed, long-term charging mode (indicated by the LED flashing every 15 seconds).

Note:

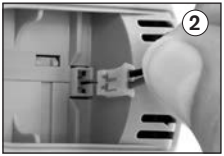
- The charging system is designed to prevent the battery from overcharging and minimizes the lazy-battery-effect. To maintain maximum battery capacity, it is best to charge the battery only when the slowly-flashing or quickly-flashing LED indicates charging is needed.
- The instrument can be used during recharging.
- If the LED does not light up during charging see chapter 'Troubleshooting' (s. page 46).

Replacing the battery

1. To open the battery compartment press at the textured surface and simultaneously slide cover back.



2. Remove the battery: grip battery plug by the wire and pull it gently out of the socket.



Warning!

Only use original manufacturer's accessories (s. page 45).
The battery must not be replaced by non-rechargeable or rechargeable batteries of other manufacturers.
Use of the wrong batteries or improper use of the instrument (e.g., short-circuit, mechanical damage, overheating, etc.) may cause the batteries to explode.

3. Grip the plug of the new battery by the wire and push it firmly into the socket until you can hear it is snapping in.

4. Insert new battery and close battery compartment.

Cleaning · UV sterilization · Autoclaving

Occasionally wipe the housing with a damp cloth.
When properly used, the instrument is maintenance-free.

The unit can withstand the usual output of a UV sterilization lamp. The effects of the UV may cause some color change.

Membrane filter, adapter and adapter support are autoclavable at 121 °C (250 °F), 2 bar absolute (30 psi) with a holding time of at least 15 minutes according to DIN EN 285.

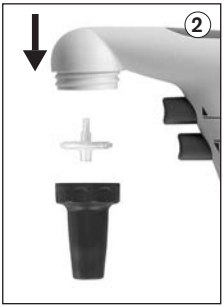
Before autoclaving, the parts must be cleaned carefully (s. page 41, 42).

Replacing the filter and cleaning the adapter

Only necessary if a pipette has been overfilled or the suction capacity is impaired.

Warning!

Wear protective gloves and eye protection.
Avoid the risk of contamination!



1. Pull out the pipette.
2. Unscrew the adapter support.
3. Pull out the membrane filter.
4. Remove the adapter from the adapter support by pushing it upwards.
   The check valve remains in the adapter!

5. To clean adapter with built-in check valve, carefully rinse it by using an appropriate compatible solvent (e.g., water) in a wash bottle.
   Blow out the liquid and allow to dry completely.

6. Place the new membrane filter with the thicker end facing downwards into the adapter (with the smaller conical side up).

7. The entire pipette adapter incl. membrane filter is autoclavable at 121 °C (250 °F), 2 bar according to DIN EN 285.

8. Reassemble the instrument in reverse order and carry out leak test.

Note:

It is the user's responsibility to ensure effective autoclaving. Not every membrane filter is suitable. Only use genuine manufacturer's recommended accessories. Each instrument will be supplied with a 0.2 µm membrane filter (red color code). The membrane filter is autoclavable up to 5 times at 121 °C (250 °F). The filter with 0.2 µm pore size (for cell culture) is sufficient to meet class B tolerances.
For class A accuracy, it is necessary to use a 3 µm membrane filter. This filter has a larger pore size and thus permits better airflow for gravity-delivery. (Spare parts s. page 45).

Leak test

When the meniscus has been set, liquid should not drip out of the pipette until the valves are activated.
Should the pipette drip, see chapter 'Trouble-shooting' (s. page 46).

accu-jet® *pro* pipette controller with AC adapter (100-240 V; 50/60 Hz), incl. battery, 2 battery compartment covers, 2 spare membrane filters (0.2 µm), wall support and operating manual.

Color*	**dark blue** Cat. No.	**magenta** Cat. No.	**green** Cat. No.	**royal blue** Cat. No.
with AC adapter for:				
Europe (continental)	263 00	263 01	263 02	263 03
UK/Ireland	263 10	263 11	263 12	263 13
USA	263 30	263 31	263 32	263 33
Australia	263 20	263 21	263 22	263 23
Japan	263 40	263 41	263 42	263 43
without AC adapter	263 04	–	–	–

* Colors refer to accent colors on instrument pipette adapter support, battery compartment cover, pipetting keys, mode selection switch and controls. Instrument body is grey.

Spare membrane filter

	Pack of	Cat. No.
0,2 µm, sterile (red color code)	1 pc. in blister pack	265 30
0,2 µm, non-sterile	10 pc. in PE-bag	265 35
3 µm, non-sterile	1 pc. in blister pack	260 52
3 µm, non-sterile	10 pc. in PE-bag	260 56

AC adapter

Input: AC 100 - 240 V; 50/60 Hz
Output: DC 5 V / 200 mA

Types	Cat. No.
Europe (continental)	266 01
UK/Ireland	266 02
USA	266 03
Japan	266 04
Australia	266 05

Wall support, grey

Cat. No.	265 40

Snap tapes, 2 sets

Cat. No.	265 42

Battery pack, NiMH

2.4 V/730 mAh

Cat. No.	266 30

Silicone adapter with non-return valve

Cat. No.	265 08

Adapter support

	Cat. No.
dark blue	266 52
magenta	266 53
green	266 54
royal blue	266 55

Trouble	Possible cause	Action to be taken
Suction capacity impaired	Motor speed is reduced	Increase motor speed (p. 35)
	Check valve closed	Set mode selection switch for 'power delivery' and press lower button for blow out (p. 37)
	Filter or check valve dirty	Clean and/or replace check valve (p. 41)
Pipette drips	Filter not properly positioned	Insert filter properly (p. 42)
	Adapter or pipette damaged	Replace adapter or pipette (p. 41)
Pipette not held properly	Adapter dirty or damaged	Clean the adapter, allow it to dry and/or replace it (p. 41)
After connecting the AC adapter, the LED-display of the instrument flashes or does not light up	Plug of the battery not firmly pushed in	Firmly push in the battery plug (p. 33)
	Wrong AC adapter	Only use original AC adapter (p. 45)
	Battery/AC adapter defective	Replace battery/AC adapter
	Instrument defective	Send the instrument in for repair (p. 47)
Low battery charge	Battery problem	Replace battery (p. 40)
Instrument doesn't work	Internal error (carry out reset)	Pull out battery plug and press a pipetting button for 10 seconds. Then firmly push in the battery plug again (p. 33)

If recommendations in the Troubleshooting section do not solve current problems, contact your authorized dealer or the manufacturer directly.

Return for repair

Important! Transporting of hazardous materials without a permit is a violation of federal law.

- Clean and decontaminate the instrument carefully.
- It is essential always to include an exact description of the type of malfunction and the media used. If information regarding media used is missing, the instrument cannot be repaired.
- Shipment is at the risk and the cost of the sender.

Outside the U.S. and Canada:

- Complete the “Declaration on Absence of Health Hazards” and send the instrument to the manufacturer or supplier. Ask your supplier or manufacturer for the form. The form can also be downloaded from www.brand.de.

In the U.S. and Canada:

- Contact BrandTech Scientific, Inc. and obtain authorization for the return **before** sending your instrument for service.
- Return only cleaned and decontaminated instruments, with the Return Authorization Number prominently displayed on the outside of the pakkage to the address provided with the Return Authorization Number.

Contact addresses

BRAND GMBH + CO KG
Otto-Schott-Straße 25
97877 Wertheim (Germany)

Tel.: +49 9342 808-0
Fax: +49 9342 808-98000
E-Mail: info@brand.de
www.brand.de

USA and Canada:

BrandTech® Scientific, Inc.
11 Bokum Road
Essex, CT 06426-1506 (USA)

Tel.: +1-860-767 2562
Fax: +1-860-767 2563
www.brandtech.com

India:

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Hiranandani Business Park, Powai
Mumbai - 400 076 (India)

Tel.: +91 22 42957790
Fax: +91 22 42957791
E-Mail: info@brand.co.in
www.brand.co.in

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Guangqi Culture Plaza
Room 506, Building B
No. 2899, Xietu Road
Shanghai 200030 (P.R. China)

Tel.: +86 21 6422 2318
Fax: +86 21 6422 2268
E-Mail: info@brand.cn.com
www.brand.cn.com

Warranty

We shall not be liable for the consequences of improper handling, use, servicing, operating or unauthorized repairs of the instrument or the consequences of normal wear and tear especially of wearing parts such as pistons, seals, valves and the breakage of glass as well as the failure to follow the instructions of the operating manual. We are not liable for damage resulting from any actions not described in the operating manual or if non-original spare parts or components have been used.

U.S. and Canada:
Information for warranty please see www.brandtech.com.

Disposal

The adjoining symbol means that storage batteries and electronic devices must be disposed of separately from household trash (mixed municipal waste) at the end of their service life.

- According to the Directive 2002/96/EC of the European Parliament and of the Council on Waste Electrical and Electronic Equipment (WEEE) of 27 January 2003, electronic equipment requires disposal according to the relevant national disposal regulations.
- Batteries contain substances that can have harmful effects on the environment and human health. Therefore according to the Directive 2006/66/EC of the European Parliament and the Council on Waste Batteries of 6 September 2006 batteries require disposal according to the relevant national disposal regulations. Dispose of batteries only when completely discharged.

Warning!

Do not short-circuit the battery to discharge it!

Subject to technical modification without notice. Errors excepted.

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