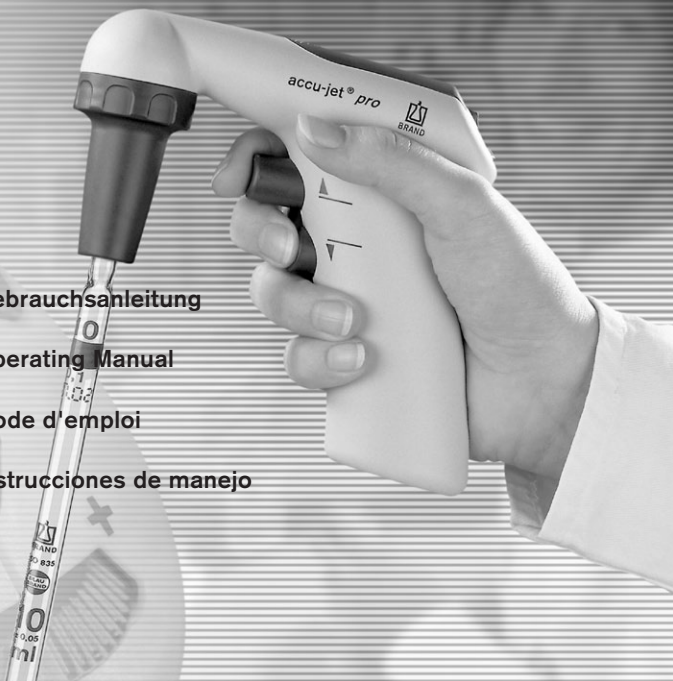


Liquid Handling · Easy Handling!



accu-jet[®] *pro*

F I R S T C L A S S · B R A N D



3 Gebrauchsanleitung

25 Operating Manual

47 Mode d'emploi

69 Instrucciones de manejo

EG-Konformitätserklärung

EC-Conformity Declaration

Das bezeichnete Gerät entspricht den einschlägigen grundlegenden Anforderungen der aufgeführten EG-Richtlinien und Normen. 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. In the case of unauthorized modifications to the device, the declaration becomes invalid.

Gerätebezeichnung/Device name: **accu-jet® pro**

Gerätetyp/Device type: **alle baugleichen Varianten/all constructional identical variants**


Hersteller/Manufacturers: **BRAND GMBH + CO KG**

Adresse/Address: **Otto-Schott-Str. 25
D-97877 Wertheim**

Einschlägige EG-Richtlinien/Normen, Relevant EC directives/standards:

- ☐ **2004/108/EG** **EN 61326-1: 2006**
Industrielle Umgebung/Industrial environment
- ☐ **2006/95/EG** **IEC 61010-1: 2nd ed. (2001)**
EN 60950-1: 2006+A11:2009
IEC 60950-1:2005 (2nd ed.); Am1:2009

Wertheim, im Februar 2011/in February 2011


.....
Peter Mahler
(Technischer Geschäftsführer/Managing Director)


.....
i.A. Josef Pfohl
(Leiter Qualitätsmanagement/Quality Management)

	Page
Safety Instructions	26
Function and Limitations of Use	28
Operating Elements	30
First Steps	31
Assembly	31
Wall support · Inverted Bench Placement	32
Pipetting Settings	33
Pipetting	34
Recharging the Battery	36
Replacing the Battery	38
Cleaning · Autoclaving	39
Replacing the Filter and Cleaning the Adapter	39
Leak Test	41
Ordering Data	42
Accessories and Spare Parts	43
Troubleshooting	44
Repairs and Warranty Information	45
Disposal	46

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 29)! 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 44), 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 36).

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.



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

Limitations of Use

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

- +10 °C to +40 °C (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/cm³

Operating Exclusions

Never use the instrument with liquids whose vapors 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) 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.

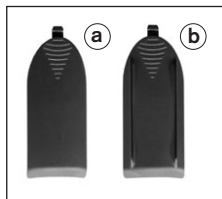
Operating Elements



Is everything in the package?

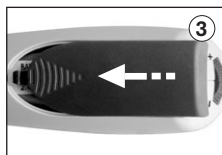
Confirm that your package includes:

- 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 32).
3. Close battery compartment.
4. Recharge the battery. Charging time is 4 hours (s. page 36).



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.

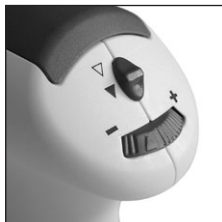
Select mode

Switch up:

▽ **Gravity-delivery**

Switch down:

▼ **Blow-out**
(with motor power)

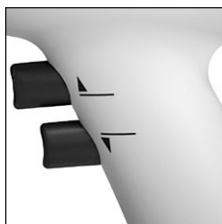


Adjust motor speed

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!

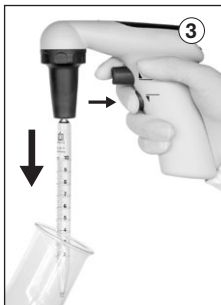
Do not overfill the pipette.



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

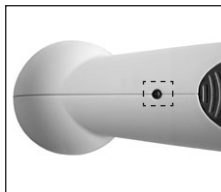
Warning!

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
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 over-charging 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 44).

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 43).
The battery must not be replaced by non-rechargeable or re-chargeable 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.



Occasionally wipe the housing with a damp cloth.

When properly used, the instrument is maintenance-free.

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 39, 40).

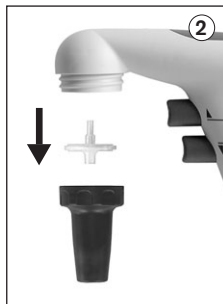
Replacing the filter and cleaning the adapter

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 (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. 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 43).

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 'Troubleshooting' (s. page 44).



Ordering Data

accu-jet® pro pipette controller with AC adapter USA (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	magenta	green	royal blue
Cat. No.	20263 30	20263 31	20263 32	20263 33

* 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)	10 pc. in blister pack	20265 39
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 USA

Input: AC 100 - 240 V; 50/60 Hz

Output: DC 5 V/200 mA

Cat. No. 266 03

Battery pack, NiMH

2.4 V/730 mAh

Cat. No. 266 30

Wall support, grey

Cat. No. 265 40

Silicone adapter with non-return valve

Cat. No. 265 08

Snap tapes, 12 x 65 mm

Cat. No. 265 42

Adapter support

Support rod connector for wall support

Cat. No. 265 83

	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. 33)
	Check valve closed	Set mode selection switch for 'power delivery' and press lower button for blow out (p. 35)
	Filter or check valve dirty	Clean and/or replace check valve (p. 39)
Pipette drips	Filter not properly positioned	Insert filter properly (p. 40)
	Adapter or pipette damaged	Replace adapter or pipette (p. 39)
Pipette not held properly	Adapter dirty or damaged	Clean the adapter, allow it to dry and/or replace it (p. 39)
After connecting the AC adapter, the LED-display of the instrument flashes or does <u>not</u> light up	Plug of the battery not firmly pushed in	Firmly push in the battery plug (p. 31)
	Wrong AC adapter	Only use original AC adapter (p. 43)
	Battery/AC adapter defective	Replace battery/AC adapter
	Instrument defective	Send the instrument in for repair (p. 45)
Low battery charge	Battery problem	Replace battery (p. 38)
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. 31)

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

Repairs and Warranty

If a problem cannot be fixed by following the troubleshooting guide, or by replacing spare parts, then the instrument must be sent in for repair.

Please note: for the safety of courriers and our employees, and to avoid violation of federal and local laws, only clean instruments free of any chemical, biological or radioactive hazards can be inspected and repaired!

Return for repair

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

BrandTech Scientific, Inc. will not accept instruments that are not appropriately cleaned and decontaminated.

Therefore contact BrandTech Scientific, Inc. and obtain return authorization **before** sending your instrument for service.

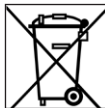
Return the instrument, with the Return Authorization Number prominently displayed on the outside of the package to the address provided with the Return Authorization Number. Include an exact description of the type of malfunction and the media used.

Warranty

We shall not be liable for the consequences of improper handling, use, servicing, operation 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 parts have been used. For length of warranty period please see our warranty card enclosed with the product.

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.