

INTEGRA



PIPETBOY pro Operating instructions

156750_V07



Declaration of conformity

INTEGRA Biosciences AG – 7205 Zizers, Switzerland

declares on its own responsibility that the devices

Description	Models
PIPETBOY pro	156400, 156401, 156402, 156403, 156404

comply with:

EU Directives (DoW: Date of Withdrawal)	Before DoW	DoW	After DoW
Low Voltage Equipment	2006/95/EC	20.04.2016	2014/35/EU
Electromagnetic Compatibility	2004/108/EC	20.04.2016	2014/30/EU
Restriction of Hazardous Substances	2011/65/EU		
Waste Electrical and Electronic Equipment	2012/19/EU		
Battery Directive	2006/66/EC		

EU Regulations

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	1907/2006
Capacity Labelling of Portable Secondary Batteries	1103/2010
Ecodesign - Power supplies	278/2009

Standards for EU

Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.	EN 61010-1: 2010
Electrical equipment for measurement, control and laboratory use - EMC requirements.	EN 61326-1: 2013

Standards for Canada and USA

Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.	CAN/CSA-C22.2 No. 61010-1
Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.	UL 61010-1

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.	Part 15 of the FCC Rules Class A
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Zizers, November 4, 2016


 Elmar Morscher
 CEO



 Thomas Neher
 Quality Manager

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Imprint

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1 Introduction

1.1 Intended use

PIPETBOY pro is a pipette controller designed for aspirating and dispensing aqueous solutions with plastic or glass pipettes of 1 to 100 ml volumes. It is intended for measurement, control and laboratory use. Any use of this instrument in a medical or IVD setting is the sole responsibility of the user.

1.2 Safety notes

- 1) Do not use or charge PIPETBOY pro in an atmosphere with danger of explosion. Also, do not pipette highly flammable liquids such as acetone or ether.
- 2) When handling dangerous substances, comply with the material safety data sheet (MSDS) and with all safety guidelines such as the use of protective clothing and safety goggles. Never point a pipette in anyone's direction.
- 3) Avoid pipetting of liquids whose vapours could attack the materials PA (polyamide), POM (polyoxymethylene), FPM (fluor-rubber), NBR (nitrile-rubber), CR (chloroprene), silicone. Corrosive vapours could also damage metallic parts inside the device.
- 4) Use an original INTEGRA Biosciences mains adapter only and protect it from moisture, otherwise PIPETBOY pro might be damaged.
- 5) Prolonged exposure of PIPETBOY pro to UV-light can cause discolouration and/or yellowing of the plastic housing. However, this will not affect the performance of the device in any way.
- 6) Old NiMH batteries may cause a safety risk. We recommend to replace the batteries after 5 years of use. Also replace the batteries if the charging intervals are unusually short or if the charging takes much longer than usual (11 hours or more). These are indicators that the batteries have reached the end of its life-cycle.
- 7) NiMH technology bears the risk of cell rupture if the battery was damaged. Do not expose the battery to heat ($> 60^{\circ}\text{C}$) and avoid mechanical stress.
- 8) To extend the battery life-cycle, it is recommended to charge the batteries once a month if the PIPETBOY pro is not used regularly. If the PIPETBOY pro is not used for more than 3 months, remove the batteries from the instrument.

Regardless of the listed safety notes, additionally applicable regulations and guidelines of trade associations, health authorities, trade supervisory offices, etc. must be observed.

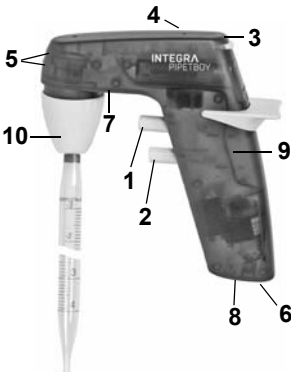
Please visit our website www.integra-biosciences.com on a regular basis for up to date information regarding REACH classified chemicals contained in our products.

2 Description of the device

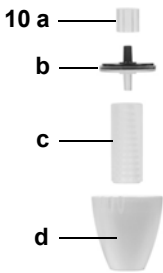
2.1 Scope of delivery

- PIPETBOY pro device
- 2 rechargeable batteries (AAA, NiMH, 1.2 V)
- Mains adapter
- Wall holder
- Hydrophobic sterile filter 0.45 μm (spare)
- Operating instructions

2.2 Overview of PIPETBOY pro



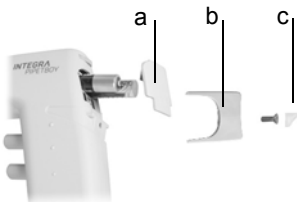
- 1 Aspiration button
- 2 Dispensing button
- 3 Thumb wheel for speed control
- 4 Battery charge indicator (red, green)
- 5 Contacts for charging station
- 6 Socket for mains adapter cable
- 7 LED illumination
- 8 On/off switch for LED illumination function
- 9 Handle



- 10 Sterile module (=nose piece)
 - 10a Filter rubber
 - 10b Hydrophobic filter
 - 10c Pipette mount
 - 10d Sterile module housing

3 Installation

3.1 Inserting or replacing the batteries



- 1) Remove the silicone plug (c), unscrew the flexor stand (b) and remove it with the cover (a).
- 2) Insert two original INTEGRA rechargeable batteries (1.2 V) with the correct polarity (+/-).
- 3) Put the cover and flexor back in place and tighten the screw not excessively. Cover the screw with the silicone plug (c).

3.2 Charging the batteries

A full charge takes 10 hours, but before the first use, PIPETBOY pro should be charged at least 16 hours.

When the battery charge indicator (4) lights up red, PIPETBOY pro needs charging immediately. PIPETBOY pro has an integrated overcharge protection.

The battery charge indicator (4) lights up green when the mains adapter is connected. PIPETBOY pro can be used while it is being charged.

3.3 Mounting of the wall holder

The supplied wall holder serves to park PIPETBOY pro.

To mount the wall holder, remove the protective foil from the adhesive tape at the back of the holder and press it to the desired place. Make sure that the surface onto which the wall holder is mounted is smooth, clean and grease-free. Wait 24 hours before using the wall holder for the first time. Alternatively the wall mount can be fixed with the included screws.

3.4 Set-up and use of the charging station (optional accessory)

The optionally available charging station (Part No 156 450) serves to simultaneously park and charge PIPETBOY pro.



To mount the charging station on a wall, use one of the following means:

- double-sided adhesive tape
- screw fixation

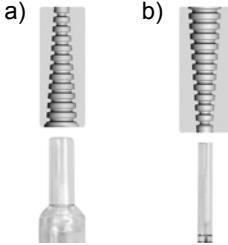
Alternatively, the charging station can be placed on the bench when fitted with rubber feet that prevent its sliding.

Plug the cable of the mains adapter in the socket on the side of the charging station and connect the mains adapter to the power supply.

Parking PIPETBOY pro in the charging station starts charging.

4 Operation

4.1 Inserting the pipette



The pipette mount (10c) has a special conical channel to guarantee a firm and leak-proof grip of the pipette independently of its diameter.

Unscrew the nose piece housing (10d) and orient the pipette mount:

- a) with the large opening facing down for pipettes > 2 ml (factory setting), or
- b) with the small opening facing down for pipettes < 2 ml.



WARNING

Do not insert pipettes with force into PIPETBOY pro, because they can break and cause injury, particularly thin pipettes made of glass.

4.2 Pipetting

Press the aspiration button (1) to fill the pipette and the dispensing button (2) to empty it.

The aspiration and dispensing speed can be controlled in two manners:

- Fine speed adjustment by varying the finger pressure on the buttons (1, 2).
- Step-less presetting of the maximum pump speed by turning the thumb wheel (3) to optimally match the pipette volume (turning to the left = slower pump speed, for small pipettes; to the right = faster, for large pipettes).

To empty the pipette by gravity force, press the dispensing button only slightly in order to avoid reaching the trigger point where the pump starts running. Gravity dispensing is used for “to deliver” (TD) pipettes that are not of the “blow-out” type (blow-out pipettes have two thin rings or a frosted band around the neck).

4.3 LED illumination

The LED (7) near the nose piece illuminates the work area around the pipette when the pipetting buttons (1, 2) are pressed. After release of the button, the LED remains alight for a approx. five seconds. The on/off-switch (8) at the base of the handle (9) serves to switch the LED function on (I) or off (O).

4.4 Troubleshooting

Problem	Probable cause	Remedy
Pipette drips (leak in the system).	Pipette is damaged or not fully inserted in the nose piece (10).	Reinsert a new pipette by pushing it all the way into the nose piece. Make sure that the pipette mount orientation is correct for the used pipette (see <u>"4.1 Inserting the pipette" on page 7</u>).
	The inside of the pipette mount (10c) is damaged resulting in insufficient sealing of the pipette neck.	Replace the pipette mount (Part No. 151020).
	The filter rubber (10a) or the filter (10b) in the nose piece are damaged or missing causing a leak.	Replace the filter rubber (Part No. 153225) and/or the filter (Part No. see <u>"7 Accessories" on page 12</u>).
Reduced aspiration efficiency or no liquid aspiration.	The filter (10b) is wet or dirty.	Replace filter.
	The nose piece (10) is not tight.	Tighten the nose piece, or replace defective parts.
	The batteries are discharged (battery charge indicator lights red).	Charge the batteries.
	The batteries are missing.	Insert the batteries, or connect the instrument to the mains adapter.
	The batteries are defective.	Replace the batteries.
	The batteries are wrongly inserted.	Insert correctly, note polarity (+) and (-).
	The batteries are worn.	Replace the batteries.
Reduced operating time with fully charged batteries.	Wrong battery type is inserted.	Use only original consumables.

5 Maintenance

After maintenance work, perform a leak test to ascertain correct functioning of PIPETBOY pro: liquid should not leak out of a filled pipette before the dispensing button is pressed.

5.1 Cleaning and servicing

PIPETBOY pro can be cleaned with a cloth moistened with soapy water or with a 70% ethanol.

It is recommended to change the hydrophobic filter (10b) every three months. Should the filter get wetted or soiled, it has to be changed immediately. The filter must be oriented with the blue (0.45 µl) / red (0.2 µl) side facing upwards towards PIPETBOY pro.

5.2 Decontamination

The nose piece (10), the pipette mount (10c) and the filter rubber (10a) can be autoclaved at 121°C, 1 bar overpressure for 20 minutes. Silicone may become brittle after extensive autoclaving. Replace the pipette mount and filter rubber if they are damaged.

If the housing of the PIPETBOY pro have been in contact with biohazardous material, it must be decontaminated in accordance to good laboratory practice. Do not spray directly on the instrument but use a lint-free cloth, lightly soaked with a disinfectant and wipe dry directly after decontamination. Never use acetone or other solvents! Follow the instructions provided by the disinfectant manufacturer.

5.3 Equipment disposal



The PIPETBOY pro device must not be disposed of with unsorted municipal waste. Do not dispose of the device in a fire. Do not modify the NiMH batteries in any way. Discharge the batteries before disposal. Dispose of the PIPETBOY pro and the batteries separately in accordance with the laws and regulations in your area governing disposal of devices containing NiMH batteries.

6 Technical Data

6.1 Specifications

Pipetting speed	max. 12 ml/s
Batteries	Type: rechargeable, AAA, NiMH, 1.2 V Charging cycles: 500-1000 (when charging as indicated) Running time: at least 4000 cycles of aspiration and dispensing of 25 ml.
Electricity supply	Mains adapter input: 100–240 VAC, 50/60 Hz Device input: 8–10 VDC, 4.5 W
Materials	Housing: ABS (white), MABS (all other colors) Nose piece: POM Pipette mount: Silicone Filter rubber: Silicone
Dimensions (H x W x D)	145 x 130 x 35 mm
Weight	190 g
Ambient conditions	Operation: 5–40°C, max. 80% RH Storage: -10–50°C, max. 95% RH

6.2 Chemical compatibility

The table below lists PIPETBOY pro parts that come into contact with the aspirated liquid or its aerosols and vapors, and rates the compatibility of these parts to a few of the chemicals commonly used in laboratories. To determine the compatibility of a component to a chemical not listed in the table, please consult one of the several tables available on the internet. Note that the rating refers to soaking in the concentrated chemical; however, more relevant here is the attenuated effect resulting from vapors and the diluted chemical. It is recommended to test the compatibility of relevant components to a specific chemical prior to extensive use.

INTEGRA Biosciences does not warrant that the information in the table is accurate or complete and that any material is suitable for any purpose.

Chemical compatibility chart

Parts	Materials	JAVEL (e.g. NaClO)	Acetic acid (25 %)	Ethanol	Isopropyl alcohol	NaCl saturated	Sodium hydroxide (50 %)	Sodium acetate (3M, pH 5.2)	Hydrochloric acid (20 %)	Chloroform	Acetone
Handle (white)	ABS	A	C	A	B	A	A	A	A	C	C
Handle (other colors)	MABS	A	A	A	B	A	A	A	A	C	C
Nose piece housing	POM	C	C	A	A	A	A	A	B	A	A
Pipette mount, Filter rubber, tubings	Silicone	A	B	A	A	A	A	C	A	C	C
Internal parts (e. g. pump)	FPM	A	A	A	A	A	C	C	A	A	C
	NBR	A	B	B	A	A	A	A	A	C	C
	CR	A	A	A	A	A	A	A	A	B	A
	Metal	C	C	A	A	B	C	A	C	A	A

Compatibility ratings:

A = Good: no or minor effects.

B = Fair: moderate effects, not recommended for continuous use.

C = Critical: not recommended, suitability to be determined by test.

7 Accessories

Accessories		Part No.
Charging station	for parking and charging PIPETBOY pro	156 450
Stand for PIPETBOY and VACUBOY	for parking PIPETBOY pro with inserted pipette and for a well organized work area	155065
Steril module (nose piece)	for holding filter rubber, filter and pipette mount	156 104
Wall holder	for parking PIPETBOY pro on the wall	156708
Mains adapter (100-240 VAC, 50/60 Hz)	US version	156630
	EU version	156631
	UK version	156632
	AU version	156633
	JP version	156634

Consumables		Part No.
Filter 0.45 µm	sterile	153015
	non-sterile	153016
Filter 0.2 µm	sterile	156608
	non-sterile	156607
Pipette mount	for holding pipette in the nose piece, silicone	151020
Filter rubber	for holding the filter in the nose piece, silicone	153225
Battery set	2 AAA batteries (NiMH, 1.2 V)	156 151

Battery cover set		Color	Part No.
Set contains:	colored lid, flexor stand, screw and cover	white	156430
		pink	156431
		green	156432
		orange	156433
		blue	156434