

# INTEGRA



## PIPETBOY acu 2 Operating instructions

466079\_V09

# INTEGRA



Declaration of conformity | Konformitätserklärung |  
Déclaration de conformité | Declaración de conformidad |  
Dichiarazione di conformità

**INTEGRA Biosciences AG – 7205 Zizers, Switzerland**

declares on its own responsibility that the product | erklärt in alleiniger  
Verantwortung, dass das Produkt | déclare sous sa responsabilité exclusive,  
que le produit | declara bajo su propia responsabilidad que el producto |  
dichiara sotto la propria responsabilità che il prodotto

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**PIPETBOY acu 2      Models: 155000, 155015, 155016, 155017, 155018, 155019**

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**PIPETGIRL              Model: 155021**

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in accordance with EC directives | gemäss der EU-Richtlinien |  
est conforme au terme de la directives CE | de acuerdo con las directivas CE |  
in conformità alle direttive CE

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**2006/95/EC              Low voltage equipment**

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**2004/108/EC            Electromagnetic compatibility**

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**2011/65/EC             Restriction of Hazardous Substances**

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**2002/96/EC             Waste Electrical and Electronic Equipment**

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**2009/129/EC           Eco Design Directive**

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**2006/66/EC            Battery Directive**

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is in compliance with the following normative documents: | mit den folgenden  
normativen Dokumenten übereinstimmt: | aux documents normatifs ci-après: |  
cumple las documentos normativos: | soddisfa le normative seguenti:

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**EN 61010-1              Safety requirements for electrical equipment for measurement,  
control and laboratory use - General requirements.**

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**EN 61326-1              Electrical equipment for measurement, control and laboratory  
use - EMC requirements.**

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## **Standards for Canada and USA**

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

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**UL Std. No. 61010-1      Safety requirements for electrical equipment for measurement,  
control and laboratory use - General requirements.**

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**FCC, Part 15, Class A Emission**

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**Zizers, October 17, 2014**

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## Imprint

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This operating instruction manual applies to serial number 1350 000 or higher of PIPETBOY acu 2 / PIPETGIRL.

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## 1 Introduction

### 1.1 Intended use

PIPETBOY acu 2 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.

PIPETGIRL is a special model of PIPETBOY acu 2 and provides the same functions as PIPETBOY acu 2.

### 1.2 Safety notes

- 1) Do not use or charge PIPETBOY acu 2 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 acu 2 might be damaged.
- 5) Prolonged exposure of PIPETBOY acu 2 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.

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

## 2 Description of the device

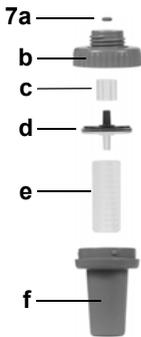
### 2.1 Scope of delivery

- PIPETBOY acu 2 / PIPETGIRL device
- 1 rechargeable Li-ion battery
- Mains adapter
- Wall mount
- Sterile filter (spare)
- Quick Start Guide

### 2.2 Overview of PIPETBOY acu 2



- 1 Aspiration button
- 2 Dispensing button
- 3 Thumb wheel to set maximum speed
- 4 Battery charge indicator
- 5 Socket for mains adapter cable
- 6 Handle
- 7 Sterile module complete (=nose piece)



- 7 Sterile module complete (=nose piece)
- 7a O-ring
- 7b Housing of sterile module, upper part
- 7c Filter rubber
- 7d Filter
- 7e Pipette mount
- 7f Housing of sterile module, lower part

### 3 Installation

#### 3.1 Charging the battery

A full charge takes 3.5 hours. Before the first use, PIPETBOY acu 2 should be charged until the battery charge indicator (4) turns green, showing that the battery is full.

When the battery charge indicator (4) starts flashing red, PIPETBOY acu 2 can be used for around 100 pipetting cycles before shutting down. It should thus be recharged immediately.

PIPETBOY acu 2 has an integrated protection: it will not overcharge even if it is connected to power for indefinite time. To avoid unnecessary power consumption, it is recommended to unplug the power supply when the charge indicator is green. PIPETBOY acu 2 can be used while it is being charged.

The battery charge indicator provides various information:

Battery charge indicator	Battery status and information
Flashes red	Battery is low. Charging is needed.
Is red and power supply is connected	Battery is being charged.
Is green and power supply is connected	Battery is fully charged.
Flashes alternately red and green	Battery error. Check if the correct type of battery with correct polarity (+/-) and/or power supply are used.

#### 3.2 Replacing the battery



- 1) Move the lid of the battery compartment upwards and remove it (a).
- 2) Replace the old battery with an original INTEGRA BIOSCIENCES rechargeable battery (see [“7 Accessories” on page 11](#)) and make sure that it is inserted with the correct polarity (+/-).
- 3) Close the battery compartment with the lid (a).

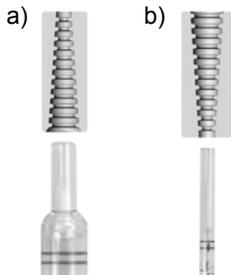
#### 3.3 Mounting of the wall mount

The wall mount serves to park PIPETBOY acu 2.

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

## 4 Operation

### 4.1 Inserting the pipette



The silicone pipette mount (7e) has a special conical channel to guarantee a firm and leak-proof grip of the pipette independently of its diameter.

Disassemble the nose piece (see “5.1 Cleaning and servicing” on page 10) 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 acu 2, 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 capacity (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).

PIPETBOY acu 2 is featured with a “TURBO” mode. Plug the mains adapter cable into the pipette controller and turn the thumb wheel completely to the right for maximal speed.

### 4.3 Troubleshooting

Problem	Probable cause	Remedy
Pipette drips (leak in the system).	Pipette is damaged or not fully inserted in the nose piece (7).	Reinsert a new pipette and push it all the way into the nose piece. Make sure that the pipette mount orientation is correct (see section 4.1).
	The inside of the pipette mount (7e) is damaged resulting in insufficient sealing of the pipette neck.	Replace the pipette mount (#151 020).
	The filter rubber (7c) or the filter (7d) in the nose piece are damaged or missing causing a leak.	Replace the filter rubber (#153 225) and/or the filter (Part No. see "7 Accessories" on page 11).
Reduced aspiration efficiency or no liquid aspiration.	The filter (7d) is wet or dirty.	Replace filter.
	The nose piece (7) is not tight.	Tighten the nose piece, or replace defective parts.
	The battery is discharged (battery charge indicator flashes red)	Charge the battery.
	The battery is missing.	Insert the battery, or connect the instrument to the mains adapter.
	The battery is defective.	Replace the battery.
	The battery is wrongly inserted.	Insert correctly, note polarity (+) and (-).
Reduced operating time with fully charged battery.	The battery is worn.	Replace the battery.
	Wrong battery type is inserted.	Use only original Li-ion battery (#155 066).
Extremely long charging time of battery.	Wrong mains adapter is used.	Use only original mains adapter (see "7 Accessories" on page 11).
Extremely short charging and operating time.	Wrong battery type is inserted.	Use only original Li-ion battery (#155 066).

<b>Problem</b>	<b>Probable cause</b>	<b>Remedy</b>
Battery is not charging.	The battery is wrongly inserted.	Insert correctly, note polarity (+) and (-).
	Wrong battery type is inserted.	Use only original Li-ion battery (#155066).
	Wrong mains adapter is used.	Use only original mains adapter (see section 7).
Battery operation not possible.	The battery is wrongly inserted.	Insert correctly, note polarity (+) and (-).
	Wrong battery type is inserted.	Use only original Li-ion battery (#155066).
	The battery is missing.	Insert the battery.

## 5 Maintenance

### 5.1 Cleaning and servicing

PIPETBOY acu 2 can be cleaned with a cloth moistened with soapy water or with a 70 % ethanol. Never use acetone or other solvents.

The nose piece housing (7b, 7f), the pipette mount (7e) and the filter rubber (7c) can be autoclaved at 121 °C.

#### Disassembly of the nose piece:



Unscrew the nose piece (7) from the handle by turning it counter clockwise. Hold the upper part of nose piece (7b), press the lower part (7f) firmly against the upper part (7b) and turn it counter clockwise (left). The lower part of nose piece housing (7f) will disengage after about 1/8<sup>th</sup> of a turn.

Remove the pipette mount (7e), the filter (7d) and the filter rubber (7c), if required.

It is recommended to change the hydrophobic filter (7d) every three months. Should the filter get wetted or soiled, it has to be changed immediately. The filter must be oriented with the colored side (blue or red) facing upwards towards PIPETBOY acu 2.

After maintenance work, perform a leak test to ascertain correct functioning of PIPETBOY acu 2: liquid should not leak out of a filled pipette before the dispensing button is pressed.

### 5.2 Equipment disposal



PIPETBOY acu 2 device must not be disposed of with unsorted municipal waste.

Dispose of PIPETBOY acu 2 in accordance with the laws and regulations in your area governing disposal of devices.

## 6 Technical Data

Pipetting speed	max. 13.5 ml/s (with a 50 ml serological pipette)
Battery	Type: rechargeable, Li-ion, min. 500 mAh Typical charging time: 3.5 hours Charging cycles: 500–1000 (when charging as indicated) Running time: at least 5500 cycles of aspiration and dispensing of 25 ml.
Mains adapter	Input: 100–240 VAC, 50/60 Hz Output: 17 VDC $\pm$ 10 % / 180 mA $\pm$ 10 %
Materials	Housing: PA Nose piece housing: POM Pipette mount: Silicone Filter rubber: Silicone
Dimensions (H x W x D)	125 x 130 x 35 mm
Weight	195 g
Ambient conditions	Operation: 5–40°C, max. 80% RH Storage: -10–50°C, max. 95% RH

## 7 Accessories

Accessories		Part No.
Stand for PIPETBOY	for a well organized work area, to park PIPETBOY acu 2 with inserted pipette	155065
Wall mount	for holding PIPETBOY acu 2 on the wall	155521
Mains adapter (100-240 VAC, 50/60 Hz)	EU version	153210
	US/JP version	153211
	UK version	153214

<b>Consumables</b>		<b>Part No.</b>
Sterile module (nose piece) complete (7)	turquoise for PIPETBOY acu 2 classic and transparent; with filter 0.45 µm, unsterile	155025
	classic (grey) for PIPETBOY acu 2 green, blue, red and purple, PIPETGIRL; with filter 0.45 µm, unsterile	155070
Sterile module (nose piece) housing (7b,7f)	turquoise, for PIPETBOY acu 2 classic and transparent	155230
	classic (grey), for PIPETBOY acu 2 green, blue, red and purple, PIPETGIRL	155060
Filter 0.45 µm (7d)	sterile	153015
	unsterile	153016
Filter 0.2 µm (7d)	sterile	156608
	unsterile	156607
Pipette mount (7e)	silicone, for holding pipette in the nose piece	151020
Filter rubber (7c)	silicone, for holding the filter in the nose piece	153225
O-ring (7a)		153235
Battery compartment lid	classic (grey)	155203
	green	155160
	red	155161
	blue	155162
	transparent	155163
	purple	155164
	pink (PIPETGIRL)	155166
Battery Li-ion	for PIPETBOY acu 2 / PIPETGIRL (with serial number >=1350001)	155066



**WARNING**

Only use the battery Li-ion for PIPETBOY acu 2 (serial number >=1350001; LED is white when inactive, red or green when active)!  
The NiMH battery for PIPETBOY acu is not compatible!

serial number

