

BlueSwan
Pipette Controller
BSST-0100

Operation Manual

Ver. 1.0



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Table of Contents

1. Safety Precautions	1
2. General Description	2
2.1 Features	2
2.2 Product Overview	3
2.3 Materials	4
3. Getting Started	5
3.1 Unpacking	5
3.2 Battery Installation	6
3.3 Recharging the Battery	7
3.4 Battery Indicator	8
3.5 Starting Pipetting	8
3.6 Wall Mount Installation	9
3.7 Self-inverted Design	10
3.8 Protective Hole	10
4. Preventative Maintenance	11
4.1 Replacing Filter/Pipette Holder	11
4.2 Cleaning and Disinfection	11
5. Troubleshooting	12
Appendix A: Technical Specifications	13
Appendix B: Warranty	14
Appendix C: CE Declaration	15
Appendix D: Order Information	16

1. Safety Precautions

Before using the **BlueSwan** pipette controller for the first time, please read this entire operation manual carefully. To guarantee problem free, safe operation of the **BlueSwan** pipette controller, it is essential to observe the following:

1. When using infectious, radioactive, toxic and other solutions which may pose health risks, please observe the appropriate safety precautions.
2. Do not use the **BlueSwan** pipette controller in a potentially explosive environment or with potentially explosive, flammable liquids.
3. The **BlueSwan** pipette controllers operate on a small but powerful lithium-ion polymer battery. Misuse or abuse of the lithium-ion polymer battery may cause damage or injury through fire, electric shock, or chemical leakage.
4. Do not incinerate the lithium-ion polymer battery or expose it to temperatures higher than 60°C.
5. Do not short-circuit, puncture, crush, disassemble, damage, force over-discharge (reversal) or modify the battery.
6. Do not expose the battery to water or moisture.
7. Only use the battery specified in this manual.
8. Only use the specified battery charging adaptor to charge the battery. Using an unauthorized battery charging adaptor might cause a short-circuit or fire on the **BlueSwan** pipette controller.
9. Do not use a leaking battery.
10. If charging is not completed within the specified time period (see Section 3.3 Recharging the Battery), unplug the charger and stop charging immediately.
11. The charger temperature and battery temperature rise with extended periods of use. Care should be taken to avoid burns.
12. If fluid from the battery enters your eye, immediately rinse the eye with plenty of fresh water and seek medical advice. If fluid from the battery makes contact with your skin or clothing, wash the area thoroughly with water.
13. The **BlueSwan** pipette controller can't be used with solvents whose vapors attack silicone, acrylonitrile butadiene styrene (ABS), polypropylene (PP), nitrile butadiene rubber (NBR), polyvinylidene fluoride (PVDF).
14. Please observe the relevant regulations to dispose of the battery.
15. All repairs should be carried out by authorized service personnel only.

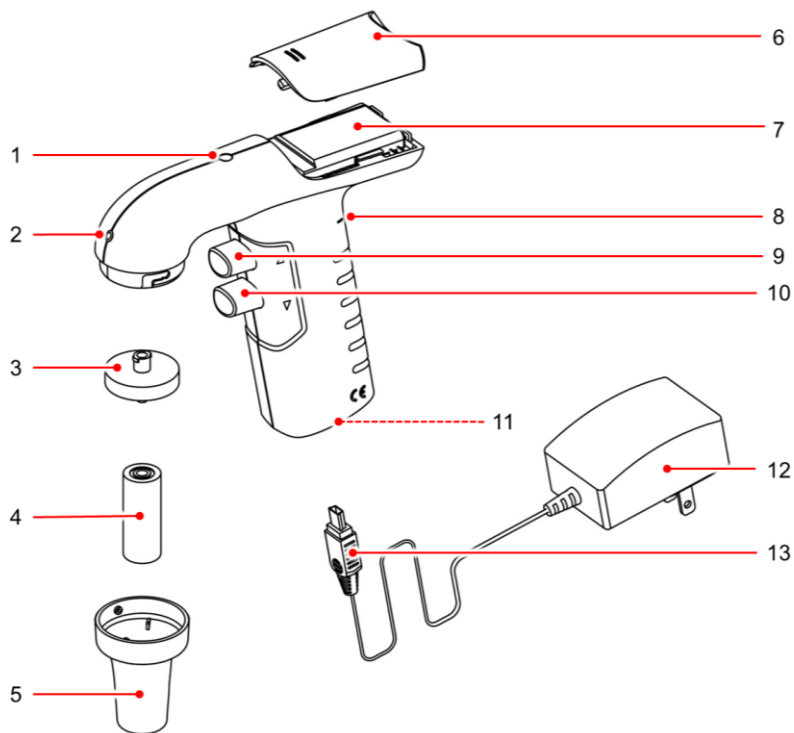
2. General Description

The **BlueSwan** is an elegant, easy to use and reliable pipette controller. Its ergonomic design makes it easy to handle and operate. It also offers precise control of aspiration and dispensing of liquid.

2.1 Features

- Light-weight and ergonomic design for easier handling
- Continuous speed control by wheel and push buttons
- Blow-out and Gravity dispense selection
- Powerful and stable lithium-ion polymer battery
- Reliable mini-USB plug for charger adapter
- Three-color LED battery indicator shows the battery status
- Can be operated during the recharging period
- Self-inverted design
- Liquid and vapor protective hole
- UV-resistant housing
- Allow fast removal of nose cone for easier access to filter
- Compatible with 1 ~ 100 ml plastic and glass serological pipettes
- Removable battery cover

2.2 Product Overview

Figure 1. Overview of the **BlueSwan** pipette controller.

1	Battery indicator	2	Protective hole
3	Filter	4	Pipette holder
5	Nose cone	6	Battery cover
7	Lithium-ion polymer battery	8	Speed control wheel
9	Aspiration button	10	Dispensing button
11	Mini-USB socket	12	Charger adapter
13	Mini-USB plug		

2. General Description

2.3 Materials

Component	Materials
Housing, battery cover, wall mount	Acrylonitrile Butadiene Styrene (ABS)
Aspiration button, dispensing button, nose cone	Polypropylene (PP)
LED cover	Polycarbonate (PC)
Membrane filter	Polytetrafluoroethene (PTFE)
Pipette holder	Silicone

3. Getting Started

3.1 Unpacking

Open the **BlueSwan** pipette controller package and confirm that all items listed below are included:

- **BlueSwan** pipette controller
- Lithium-ion polymer battery
- Wall mount
- Operation manual
- Charger adapter
- Spare membrane filter, 0.2 μm

If there are any items missing, damaged, or the package contains incorrect items, please contact Blue-Ray's distributor or sales representative immediately.

3. Getting Started

3.2 Battery Installation

After checking the pipette controller package, please follow the steps below to install the battery (Figure 2).

1. Open the battery cover by sliding the cover outward.
2. Connect the battery cable to the unit. Be aware of the orientation of the cable connector.
3. Insert the battery into the battery compartment. Place the battery cable inside first.
4. Align the battery cover with cover slot first. Close the battery cover by sliding the battery cover inward.

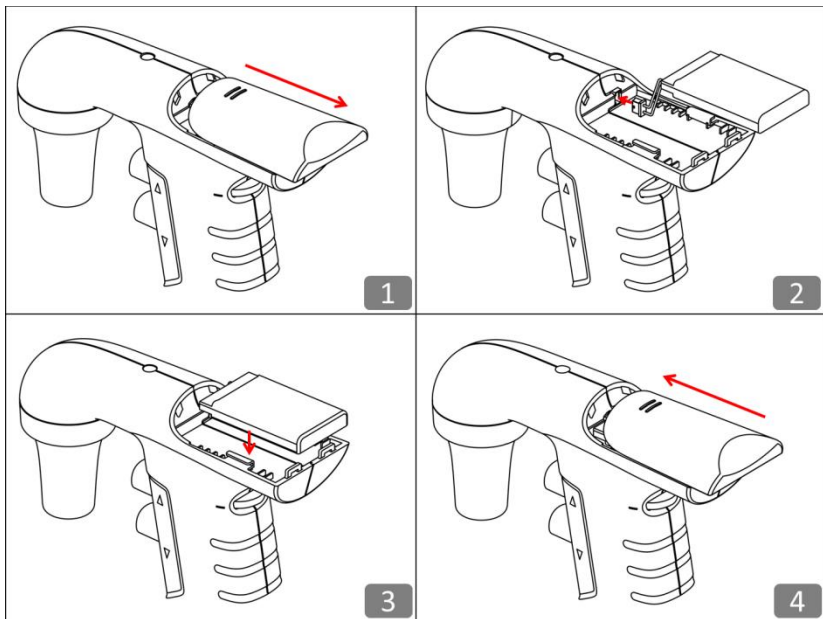


Figure 2. Battery installation.

3.3 Recharging the Battery

Please charge the lithium-ion polymer battery 4 hours before first-time operation.

When the battery indicator turns red (low battery), follow the steps below to recharge the battery (Figure 3).

1. Plug the mini-USB jack of the charger adapter into the mini-USB socket in the base of the unit.
2. Plug the charger adapter into an external power source.
3. The battery indicator will start blinking red during charging period.
4. After the battery is fully charged, the battery indicator will turn blue. The charging period takes approximately 4 hours.

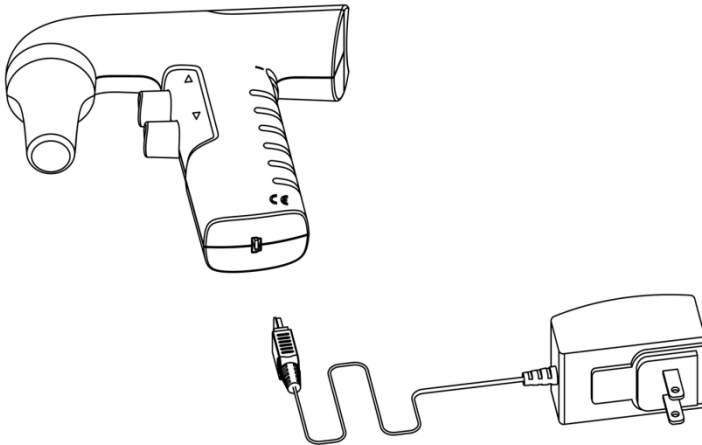


Figure 3. Recharging the battery.

Note

1. Charge the battery at least once every 3 month to avoid over-discharge which might damage the internal battery cells, even you did not use the **BlueSwan** pipette controller during this period.
2. The **BlueSwan** pipette controller can be operated during the recharging period.
3. Only use the original manufacturer's battery and charger adapter (see Appendix D: Order Information).

3. Getting Started

3.4 Battery Indicator

The LED battery indicator explains the battery status for users (Table 1).

Table 1. Battery indicator

Use Status	Battery Indicator	Battery Status
Operating	Blue	Fully charged
	Purple	Half charged
	Red	Almost empty
	Off	Empty
Charging & operating during charging	Blinking red	Partial charged
	Continuous blue	Fully charged

3.5 Starting Pipetting

3.5.1 To Aspirate

1. Carefully hold the pipette and securely insert it into the pipette holder in the nose cone.
2. Select the pipetting speed by rotating the speed control wheel.
3. Press the aspirating button. The flow rate is regulated by the pressure applied to the aspiration button.

3.5.2 To Dispense

1. In "Gravity mode", press the dispensing button lightly (4 ~ 5 mm). The liquid in the pipette is dispensed by gravity only.
2. In "Blow-Out mode", press the dispensing button (> 5 mm). The flow rate is regulated by the pressure applied to the dispensing button.

Note
1. Speed control should depend on the pipette used.
2. Please do not use the BlueSwan pipette controller without the protective membrane filter.
3. Replace the filter if the liquid pass it.

3.6 Wall Mount Installation

The **BlueSwan** pipette controller is supplied with a wall mount that can be attached to a wall with 2 stickers (provided). The wall mount can hold the nose cone of the pipette controller and it keeps the pipette controller in a vertical position. Please follow the procedure below to perform installation (Figure 4).

1. Adhesive tape works best on smooth surfaces, e.g. metal, glass or plastic surfaces. Clean with isopropyl rubbing alcohol by wiping gently.
2. Remove the liner and press the wall mount directly onto the wall. Press along the entire wall mount for 30 seconds. The harder you press, the stronger the adhesive bond will be.
3. Wait 24 hours before hanging the pipette controller on the mount.

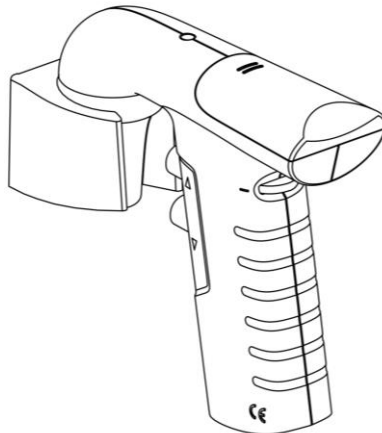


Figure 4. Wall mount installation.

3.7 Self-inverted Design

The pipette controller can be self-inverted on the bench without a holder or stand as shown in Figure 5 below.

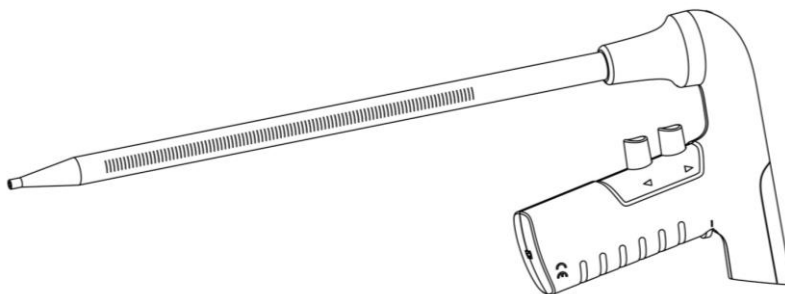


Figure 5. Self-inverted on the bench.

3.8 Protective Hole

The liquid and vapor that get into the filter will flow in the tube and spurt from the protective hole. This design can prevent the parts in the **BlueSwan** pipette controller from corrosion and contamination.

4. Preventative Maintenance

4.1 Replacing Filter/Pipette Holder

The hydrophobic PTFE filter and pipette holder will require occasional replacement, particularly when aspirating speed is decreased. Rotate the nose cone clockwise and remove it. You can squeeze the top of the pipette holder and then remove the pipette holder and filter together. Replace the wet, dirty filter/worn pipette holder with a new one. Reassemble the device.

4.2 Cleaning and Disinfection

Before cleaning, disconnect the unit from the charging adaptor.

The **BlueSwan** Pipette controller can be cleaned with most common laboratory disinfectants, such as 60% Isopropanol, 70% ethanol or mild detergent. The PTFE filter, polypropylene nose cone and silicone pipette holder can be autoclaved (121°C, 1.2 kg/cm² for 20 min).

5. Troubleshooting

To ensure of the product's quality and performance, the pipette controller is designed to be robust and long-lasting. If the problems cannot be resolved with the solutions below, please contact the authorized distributors.

Symptom	Possible Cause	Solution
Reduced suction efficiency.	Filter blocked, dirty or wet.	Clean or replace filter.
	Low battery.	Recharge battery.
Pipette drips.	Pipette not securely inserted in pipette holder.	Insert pipette further.
	Pipette holder / filter inserted incorrectly.	Reinsert the pipette holder and filter carefully.
	Pipette holder or pipette damaged.	Replace pipette holder or pipette.
No function even though the battery is fully charged.	Battery is aged.	Replace battery.
Pipette loose.	Pipette holder damaged.	Replace pipette holder.

Appendix A: Technical Specifications

Pipette Compatibility	1 - 100 ml plastic/glass pipette
Max Aspirating and Dispensing Speed	>7.5 ml/sec.
Dispensing Mode	Blow-out/Gravity
Speed Control Wheel	Continuous; +/- indicates Fast/Slow
Number of Dispenses	Approx. 4500 times (with a 25 ml pipette)
Charging Time	Approx. 4 hours at 100% charging
Charger Adaptor	Input: AC 100 - 240V 50/60 Hz Selectable power plug: US/EU/UK/AU Output: DC 5V/2.0 A
Power Jack	Mini-USB
Filter	Hydrophobic 25 mm diameter, 0.2 µm
Battery	Lithium-ion polymer battery 3.7 V/1100 mAh
Autoclavable	Nose cone, pipette holder and filter only
Operating Temperature	5 - 40°C
Operating Humidity	RH: 0 - 85%
Weight	180 g, including a battery
Certification	Complies with CE, EN61010-1, EN55011, EN61326-2-6 (Class A) RoHS compliant

Appendix B: Warranty

The **BlueSwan** pipette controllers are covered by a warranty for one year against defects in materials and workmanship. This period begins from the date of purchase, and within this period all defective parts will be replaced at no charge by the manufacturer. The warranty does not cover defects caused by excessive wear and tear or damage due to shipping, accident, abuse, misuse, problems with electrical power, or usage not in accordance with product instructions, or if other than original spare parts supplied by the manufacturer have been used. Each **BlueSwan** pipette controller is tested and documented by the manufacturer before shipping.

Serial No.: _____

Date Purchased: _____

Supplier: _____

Appendix C: CE Declaration



BLUE-RAY BIOTECH CORP.
4F., No. 31, Sec. 2, Chang-An E. Rd.,
Zhong-Shan Dist., Taipei City 10456,
Taiwan (R.O.C.)

Declaration of Conformity

Product Name: BlueSwan

Model Names: BSST-0100

All models comply with the following European standards:

EMC: EN55011
EN61326-2-6 (Class A)

Safety: EN61010-1

To the best of my knowledge and belief, these units conform to these standards.

Name: Jimmy Kuo

Position: Quality Assurance Manager

Issue Date: 2016. 7. 18

Appendix D: Order Information

Order No.	Description
BS01-1000	BlueSwan pipette controller, US plug
BS01-2000	BlueSwan pipette controller, EU plug
BS01-3000	BlueSwan pipette controller, UK plug
BS01-4000	BlueSwan pipette controller, AU plug

Blue-Ray BIOTECH CORP.

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P/N: 401-pcbr00-10