



# *FastGene*® EasyFlow

Catalog #: FG-SPC



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## FastGene® EasyFlow

### Pipette Controller

Product name	Catalog No.
FastGene® EasyFlow	FG-SPC

*For research only.*

### 1. Safety precautions

Before using the FastGene® EasyFlow pipette controller for the first time, please read this entire operation manual carefully. To guarantee problem free, safe operation of the FastGene® EasyFlow, 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 FastGene® EasyFlow in a potentially explosive environment or with potentially explosive, flammable liquids.
3. The FastGene® EasyFlow 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 FastGene® EasyFlow.
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 FastGene® EasyFlow 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 FastGene® EasyFlow 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



- 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

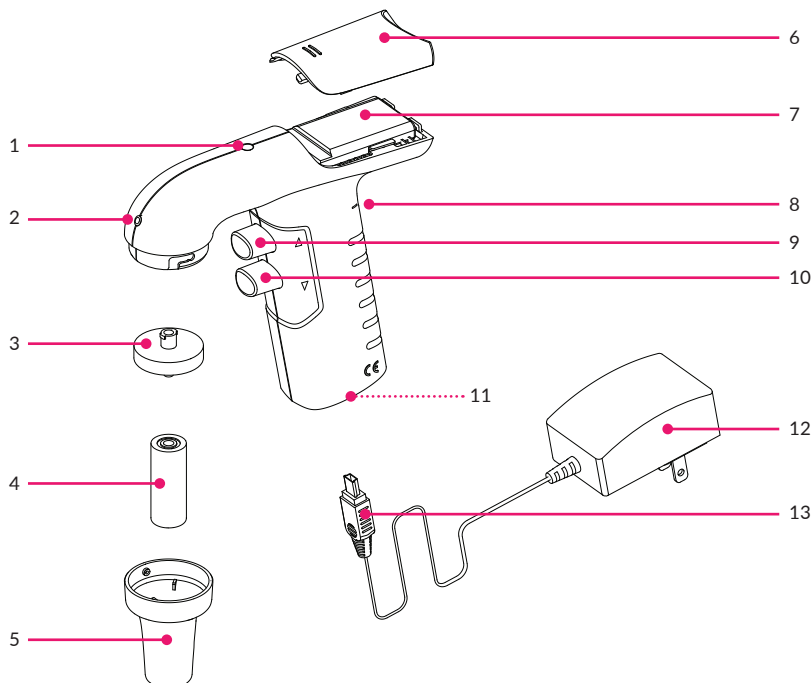


Figure 1. Overview of the FastGene® EasyFlow pipette controller.

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



## 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	Polytetrafluoroethylene (PTFE)
Pipette holder	Silicone

## 3. Getting started

### 3.1 Unpacking

Open the FastGene® EasyFlow package and confirm that all items listed below are included:

- FastGene® EasyFlow 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 NIPPON Genetics EUROPE distributor or sales representative immediately.

### 3.2 Battery installation

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

1. Remove the battery cover by sliding the cover outward.
2. Take out the battery from the battery compartment. The red wire should be on the top side and the cable connection to the battery should be on the left side.

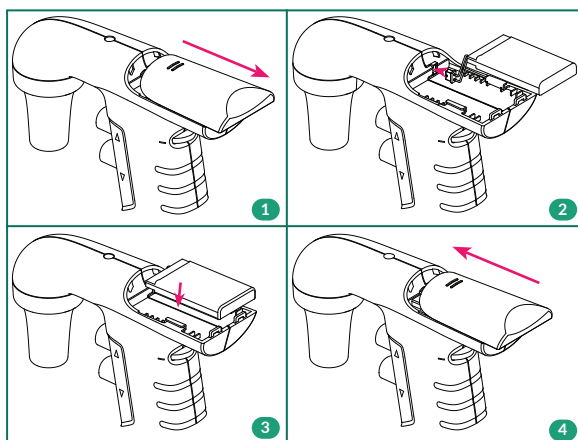


Figure 2. Battery installation.



3. Disconnect the battery cable carefully. It is easier to do this step with a forceps. Then, insert the battery into the battery compartment. Place the battery cable down below the battery.
4. Align the battery cover with cover slot first. Close the battery cover by sliding the battery cover inward. Do not pinch the cable by the battery cover.

**Note:**

The new rechargeable lithium-ion polymer battery comes in a discharged condition and must be fully charged (~4 hours) before first use.

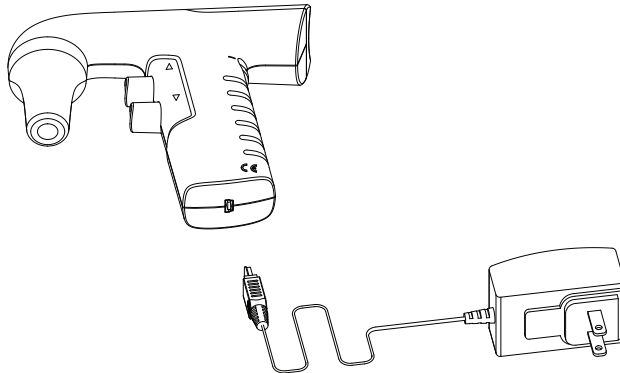
Charge the battery at least once every 3 months to avoid over-discharge which might damage the internal battery cells, even you did not use the FastGene® EasyFlow during this period.

### 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 FastGene® EasyFlow during this period.
2. The FastGene® EasyFlow can be operated during the recharging period.
3. Only use the original manufacturer's battery and charger adapter (see Appendix D: Order Information).



### 3.4 Battery indicator

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

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

- 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.
- 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 FastGene® EasyFlow without the protective membrane filter.
3. Replace the filter if the liquid pass it.

### 3.6 Wall mount installation

The FastGene® EasyFlow 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.

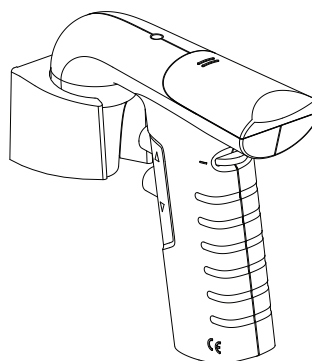


Figure 4. Wall mount installation.



### 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.

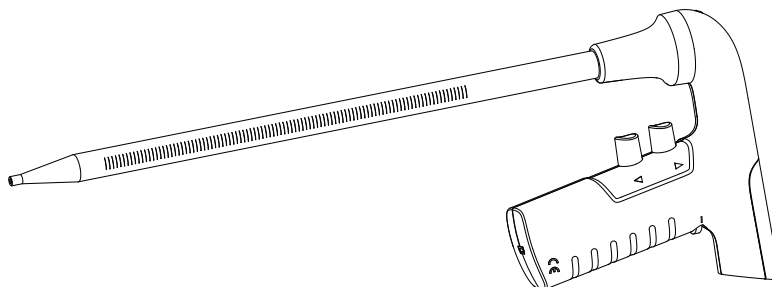


Figure 5. Self-inverted on the bench.

### 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 FastGene® EasyFlow 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 FastGene® EasyFlow 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/cm<sup>2</sup> 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

## 6. 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	<b>Lithium-ion polymer battery 3.7 V/1100 mAh</b>
Autoclavable	Nose cone, pipette holder and filter only
Operating temperature	5 - 40°C 4
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



