

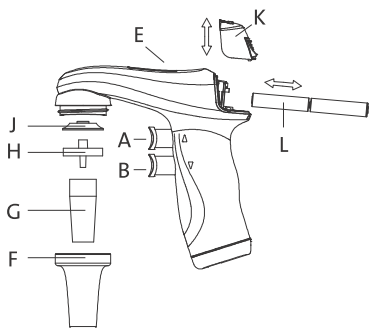
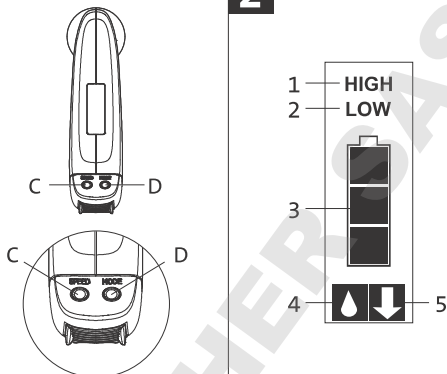
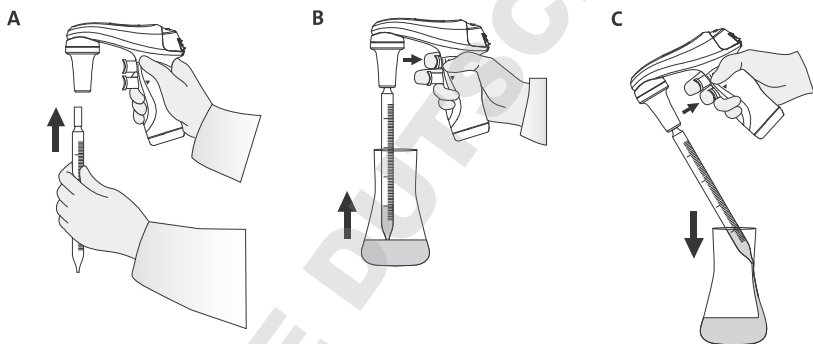
Falcon® Pipet Controller

Instruction Manual



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- A – Aspiration button – PP
- B – Dispense button – PP
- C – Suction speed switch – PP
- D – Dispense mode switch – PP
- E – Display
- F – Nose piece – PP
- G – Pipet holder – SI
- H – Membrane filter – PP / PTFE
- J – Connector gasket – SI
- K – Batteries cover – PP
- L – Battery – NiMH, AAA, 1.2V
- M – Charging stand – PP
- N – Charger 9V: EU, US, UK, AU
INPUT: 100-240V, 50/60Hz, 0.3A
OUTPUT: AC DC 9V, 230mA

Casing – PP

PP: Polypropylene

PTFE: Polytetrafluoroethylene

SI: Silicone

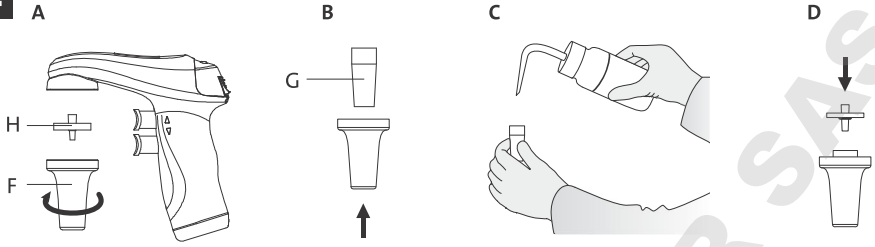
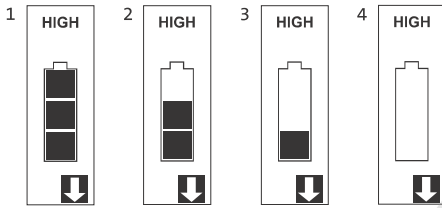
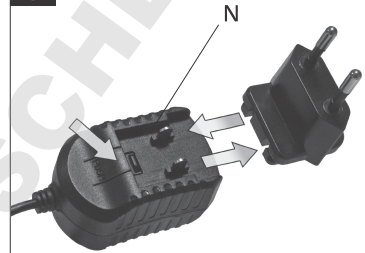
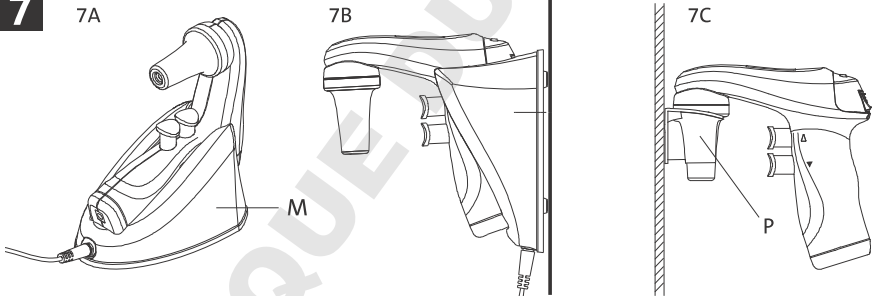
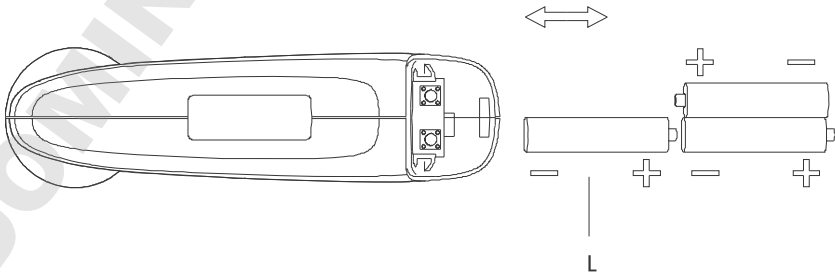
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1. Introduction

The pipet controller is a device intended for pipetting liquids with the use of measuring pipets. It can work with all types of glass or plastic pipets in the volume range from 0.5 mL to 100 mL.

Two dispense modes permit selection of dispensing intensity depending on the user's needs. The selected setting of the pipet controller mode is shown on the display (Figure 1E) Figure 1 shows the external parts of the pipet controller with a description of the materials used. Display indicators are shown in Figure 2.

2. Work Safety Instructions

⚠ WARNING! Risk of injury

CAUTION: Risk of damage to the device or errors in pipetting of liquids

Before starting the work with the pipet controller every user should read these operating instructions carefully.

CAUTION:

- Using the device inconsistently with the operating instructions may result in damaging the device.
- The device should be maintained only at an authorized service center, otherwise the manufacturer will be relieved from any liability under the warranty.
- Only original spare parts and accessories recommended by the manufacturer shall be used.
- Only the original charger supplied by the manufacturer shall be used for charging the batteries.
- Do not use the pipet controller if it is not working properly. The device should be cleaned in accordance with the operating instructions and/or sent for repair to an authorized service center.
- In the case of mechanical damage to the casing, the device shall be immediately sent for repair to an authorized service center.
- The use of excessive force during work shall be avoided.

⚠ WARNING!

- While working with the pipet controller general safety regulations regarding risks related with laboratory work should be observed. Protective clothing, goggles, and gloves should be worn.
- The pipet controller shall be used only for measuring liquids in conditions specified by the manufacturer, which are limited due to the chemical and mechanical resistance of the device, as well as the user safety.
- The pipet controller should not be used in an environment where explosion risk is present.
- The information and instructions provided by the manufacturers of the reagents must be observed.

3. Limitations of Use

- The pipet controller should not be used for measuring substances, the vapors of which damage the following plastics: PP, SI, EPDM, POM.
- The pipet controller should not be used in an environment where explosion risk is present.

- Flammable liquids should not be measured, in particular substances with flash-point below 0°C (ether, acetone).
- The pipet controller should not be used for drawing acids with a concentration above 1 mol/L.
- The pipet controller should not be used for drawing solutions with a temperature above 50°C.
- The pipet controller should be operated in the temperature range from +10°C to +35°C.
- The pipet controller is suitable for general laboratory use only. It must be used only by personnel who know the health risks associated with the substances that are normally used with this instrument.

4. Turning on the Pipet Controller

The pipet controller is switched on by pressing any of the buttons (Figures 1A, B, C, D). The display will show the selected aspiration mode, dispense mode, and the battery level indicator (Figure 2.3). Examples of the display indications are shown in Figure 5. The battery is discharged and requires charging if the indicator displays one “bar” (Figure 5.3). The display will show the selected aspiration mode, dispense mode and the batteries level indicator. Examples of the display indications are shown in Figure 5. The batteries need to be recharged if the indicator does not display “bars” (Figure 5.4). When the batteries are fully charged, the indicator displays three “bars” (Figure 5.1). The pipet controller will switch off automatically if not used for 5 minutes.

- The pipet controller should be charged only with the original charger.
- The main voltage should conform to the specification on the charger.
- Charging should be done in accordance with section 8 of this instruction for use.

5. Aspirating and Dispensing Liquids

Attaching a pipet

CAUTION: Before attaching a pipet, check to ensure the pipet is not damaged, has no dents or sharp edges in the gripping section. Check to ensure the gripping section is dry.

The pipet controller should be gripped as close to the upper end as possible and carefully inserted into the pipet controller holder until resistance is felt (Figure 3A). Do not apply excessive force, to prevent damage to thin pipets controller and to avoid injury risk. A pipet that has been correctly attached and sealed in the holder should not tilt to the side.

After attaching a pipet, hold the device in such a way as to keep the pipet controller in a vertical position with an attached pipet. When not in use, it is not recommended to leave the pipet attached for long periods, for example overnight or over a weekend.

Note: Do not rest the pipet controller on the bench if there is liquid in the pipet.

Filling the pipet

Before aspirating is started, set the suction speed switch using the HIGH/LOW switch (Figure 1C):

- HIGH position: fast aspirating (Figure 2.1)
- LOW position: slow aspirating (Figure 2.2)

It is recommended to choose the LOW position for pipets with a volume up to 5 mL, and the HIGH position for pipets with a volume greater than 5 mL. Holding the pipet controller vertically, immerse the pipet end in the liquid to be drawn up (Figure 3B), and press the aspiration button gently. The pipet filling speed depends on the pressure applied to the

aspirating button. The greater the pressure applied, the faster the liquid is aspirated into the pipet.

It is recommended to draw a slightly larger liquid volume than required (due to meniscus above the required volume mark), reducing the aspiration speed, particularly in the final filling stage, so as not to overfill the pipet.



Setting the Volume

After filling the pipet, the end should be dried with an absorbent paper that will not leave impurities, in order to remove any excess solution on the outside surface of the pipet. To set the required liquid volume precisely, press the dispense button gently (Figure 3C), dispense the excessive liquid from the pipet until the meniscus of the liquid aligns exactly with the required volume mark on the pipet.

Emptying the Pipet

Holding the vessel in an angled position, place the pipet end in contact with the vessel wall and press the dispense button gently (Figure 3C). The dispensing intensity may be adjusted depending on pressure applied to the dispense button. The greater the pressure applied, the faster the outflow of liquid from the pipet.

The pipet controller has two dispense modes. The dispense mode is selected with the BLOW/GRAV switch (Figure 1D).

- Gravity mode marked with the  icon on the display (Figure 2.4): Dispensing is effected in gravity mode, which means that the liquid flows out of the pipet by its own weight.
- Blow out mode marked with the  icon on the display (Figure 2.5): Dispensing is effected in gravity mode; however, when the dispense button is pressed to the middle position, the pump is started and fast emptying of the pipet with a blow out is affected.

CAUTION: During gravimetric dispensing the pipet may not be completely emptied due to the characteristics of pipets used with the pipet controller.

6. Troubleshooting

If during your work the pipet controller is not functioning correctly, check the cause and correct the fault.

Problem	Possible cause	Action
The pipet falls out (the holding force of the pipet is too small), or tilts to the side too much.	The pipet holder (Figure 1G) is dirty or wet.	Take out the pipet holder, and clean, wash, and dry it.
	The pipet holder is damaged.	Replace the pipet holder with a new one.
The pump is working, but the pipet controller does not draw liquid or draws liquid very slowly.	The filter (Figure 1H) is dirty.	Take out the pipet holder, take out the filter; if it is dirty, replace it with a new one.
	The pipet holder and/or the connector gasket (Figure 1J) is damaged.	Replace the mechanically damaged elements with new ones.

Problem	Possible cause	Action
Liquid leaks from the pipet (the aspiration and the dispense buttons are not pressed).	The pipet is damaged.	Check the pipet for damage (cracks, dents); if present, replace the pipet with a new one.
	The pipet is inserted incorrectly.	Check whether the pipet has been correctly inserted in the pipet holder.
	The pipet holder, the filter, or the connector gasket is installed incorrectly.	Check whether all parts are present and correctly installed.
	The pipet holder and/or the connector gasket is damaged (Figures 1G, 1J).	Replace the mechanically damaged elements with new ones.

If the above actions do not remedy the incorrect functioning of the pipet controller, the device should be sent to the nearest authorized service center.

Before being serviced, the pipet controller should be cleaned and decontaminated. Written details including the precise specification of solutions used and the type of laboratory in which the device was used, should be sent with the product.

7. Replacing the filter

Note: The work safety instructions given in section 2 should be observed when disassembling the pipet controller.

The filter replacement is necessary if drawing efficiency deterioration is observed. The direct reason may be a dirty filter after a long period of use. The procedure is shown in (Figure 4).

- Remove the pipet.
- Unscrew the nose piece (Figure 4A).
- Remove the membrane filter (Figure 4A) and the pipet holder (Figure 4B).
- Rinse the holder using a wash bottle (Figure 4C).
- Blow liquid out of the holder and set aside until it is completely dry.
- Install the new membrane filter (Figure 4D), and assemble the device in reverse order.

8. Charging the Battery

The pipet controller may be charged only with the original charger. The main voltage must conform with the specification on the charger.

Note: Using other chargers than the original one may damage the battery of the pipet controller.

Charging the battery in the pipet controller is controlled by a time circuit which controls the entire process. When the battery has been fully charged, the charging circuit disconnects automatically.

Charging:

1. Charging temperature: 10°C to 35°C.
2. Charging the battery is carried out through a charger (power supply) by direct connection to the power source, or indirectly by means of a charging stand (Figure 1M). Battery

charging is indicated by successive lighting of “bars” in the display order 4-3-2-1-4-3-2-1 (Figure 5).

3. Full charging time: 7 to 8 hours.

4. The batteries are charged when all 3 “bars” are displayed simultaneously (Figure 5.1). The pipet controller comes with 3xAAA, NiHM batteries. In order to prolong the battery life span please consider the following:

- Before the pipet controller is activated for the first time the battery should be charged.
- Full battery charge allows for approximately 6 to 8 hours of continuous work.
- Allow the battery status to come down to 1 bar before charging the battery.
- Frequent and/or incomplete charging will shorten the battery life.
- Charge overnight to avoid process disruptions.
- When low battery level is indicated, you can continue to work while charging.
- Condition the battery every month. This is done by allowing the battery to discharge completely, then charging it up to full (charge overnight to avoid process disruptions).
- If the pipet controller will not be used for several weeks, charge the battery fully, remove it from the equipment, and store it separately.
- Never mix batteries of different manufacturers, capacity, type (i.e., NiCd, NiMH, Li-ion), or usage time (old with new).
- When needed, be sure to have a replacement set of batteries available.
- Never use a battery that is damaged or leaking.

9. Maintenance

Cleaning

The pipet controller does not require any maintenance. The external parts of the pipet controller may be cleaned with a swab moistened with isopropyl alcohol.

The nose piece and the pipet holder may be autoclaved at 121°C for 20 minutes. After autoclaving, allow the silicone pipet holder to cool. The filters included in the set may be sterilized by autoclaving at 121°C for not more than 15 minutes.

Ultra violet (UV) sterilization

The outer body of the pipet controller is UV-resistant, however the recommended distance from the radiation source to the exposed element should not be less than 50 cm.

Prolonged and very intense UV exposure can cause decoloration of pipet controller parts, without affecting its performance.

Storage

The pipet controller should be stored in a dry place. Recommended storage temperature: -20°C to +50°C.

When not in use, the pipet controller should be placed in the wall hanger included with the pipet controller.

The wall hanger may be fixed on a wall on a hook or use the adhesive tape attached. The surface for the wall hanger should be smooth, clean, and degreased. After cleaning the surface, it should be wiped with isopropyl alcohol and left to dry. Before fixing the wall hanger, remove the protective film from the adhesive tape attached. Press the wall hanger hard to the surface and leave it attached without any weight for a period of 24 hours.

Note: Do not store the pipet controller with a filled pipet.

10. Components

The pipet controller set is supplied with the following components:

- Universal charger with set of adapters
- Charging stand
- Membrane filter 0.2 μm
- Instruction manual
- Wall hanger

11. Ordering Information

The Falcon® pipet controller (Corning Cat. Nos. 357469, 357470, and 357471) comes with a universal charger and a set of adapters in different versions: EU, US, UK, and AUS. Choose your country's adapter and connect to the housing.

To mount the adapter, it should be inserted into the slots of the housing in the direction of the arrow (step 1), until you hear a click (Figure 2A).

To remove or change the adapter, simply press the "PUSH" button in the direction of the arrow (step 2), then holding the button down, remove the adapter in the direction of the arrow (step 3).

12. Spare Parts for Cat. Nos. 357469, 357470, and 357471

Item in Figure 1	Description	Corning Cat. No.	Qty/Pk
F	Nose cone	357476	1
G	Silicone pipet holder	357474	1
H	PTFE filter 0.2 μm	357472	5
	PTFE filter 0.45 μm	357473	5
L	Battery set, 3xAAA, NiHM	357486	3
N	Universal power supply, 9V with set of adapters EU, US, UK, AUS	357489	1
M	2-Position charging stand	357490	
	Battery cover (US version)	357487	1
K	Battery cover (standard version)	357488	1
J	Connector gasket	357477	1
P	Wall hanger	SP9029	1

13. Product Disposal

According to Directive 2012/19/EU of the European Parliament and Council of 4th July 2012 on waste electrical and electronic equipment (WEEE) as amended, the Falcon[®] Pipet Controller is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.



Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products and available at the following link: www.corning.com/weee.

The crossed out wheeled bin symbol is printed in the product instruction manual and on the packaging to indicate that, in accordance with the requirements of Directive 2006/66/EC of 6th September 2006 on batteries and accumulators and waste batteries and accumulators, batteries must be disposed of according to national regulations.

Warranty/Disclaimer: Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

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