LABWAVE

Operating Instructions
使用说明书

Pipette Filler
大容量电动助吸器
PF-1200E

Preface

- Please read the user manual carefully before use, and follow all operating and safety instructions.
- Please read this operating manual thoroughly before using the device for the first time, and observe the instructions for use of the accessories.
- This operating manual is part of the product. It should always be accessible.
- The operating manual should be transferred along with the device to the other parties.

Declaration of Conformity

We declare under our sole responsibility that this product is in compliance with the regulations

2014/35/EU EN 61010-1

2014/30/EU EN 55011/B, EN 61326-1

2011/65/EU EN 50581

IS09001:2000

Danger symbols and danger levels

Danger symbols

The safety instructions in this manual have the following danger symbols and danger levels:

	Hazard point		Biohazard
	Cuts		Explosion
	Toxic substances		Material damage

Danger levels

DANGER	Will lead to severe injuries or death.
WARNING	May lead to severe injuries or death.
CAUTION	May lead to light or moderate injuries.
NOTICE	May lead to material damage.

1. Safety instructions

Intended use

- The pipette filler is intended for dispensing liquids. In-vivo applications (in or on the human body) are not allowed.
- The pipette filler may only be operated by skilled personnel who have received the appropriate training. All users must have read the operating manual carefully and must have become familiar with the device's mode of operation.

Warnings for intended use

WARNING!

Damage to health due to infectious liquids and pathogenic germs.

- When handling infectious liquids and pathogenic germs, observe the national regulations, the biosafety level of your laboratory, the material safety data sheets, and the manufacturer's application notes.
- Wear your personal protective equipment.
- For comprehensive regulations about handling germs or biological material of risk group II or higher, please refer to the "Laboratory Biosafety Manual" (source: World Health Organization, Laboratory Biosafety Manual, the current edition).

Warning!

Damage to health due to toxic, radioactive or aggressive chemicals.

- Wear your personal protective equipment.
- Observe the national regulations for handling these substances.
- Observe the material safety data sheets and manufacturer's application notes.

WARNING!

Risk of explosion due to explosive atmospheres or substances.

- Do not use the pipette filler in explosive atmospheres.
- Do not operate the pipette filler in rooms where explosive substances are handled.
- Do not use the pipette filler to dispense explosive, readily flammable (flash point < 21 °C), highly flammable (flash point < 0°C) or highly reactive substances.
- Do not use the pipette filler for dispensing substances which could generate an explosive atmosphere.

CAUTION!

Poor safety due to incorrect accessories and spare parts.

- The use of accessories and spare parts other than those recommended by the our company may impair the safety, functioning and precision of the device. Our company cannot be held liable or accept any liability for damage resulting from the use of accessories and spare parts other than those recommended, or from the improper use of such equipment.
- Only use accessories and original spare parts recommended by our company.

CAUTION!

Danger to people due to grossly negligent use.

- Only initiate liquid dispensing if it is safe to do so.
- For all dispensing tasks, make sure that you are not endangering yourself or anyone else.

NOTICE!

Damage to device due to penetration of liquid.

- Only immerse the serological pipette into the liquid.
- Do not put the pipette controller down when the pipette tip is filled.
- The pipette filler itself may not come into contact with the liquid.

Liability statement

In the following cases, the designated protection of the device may be affected.Liability for any resulting damage or personal injury is then transferred to the owner:

- The device is not used in accordance with the operating manual.
- The device is used outside of its intended use.
- The device is used with accessories or consumables that are not recommended by manufacturer.
- The device is maintained or repaired by persons not authorized by manufacturer.
- The user makes unauthorized changes to the device.

2. Product description

Packing List

Item	QTY
Main unit	1
Power adapter	1
USB Type-C charging cable	1
Hydrophobic filter	2 (built-in 1 piece)
Operating manual	1
Table stand	1
Wall holder	1

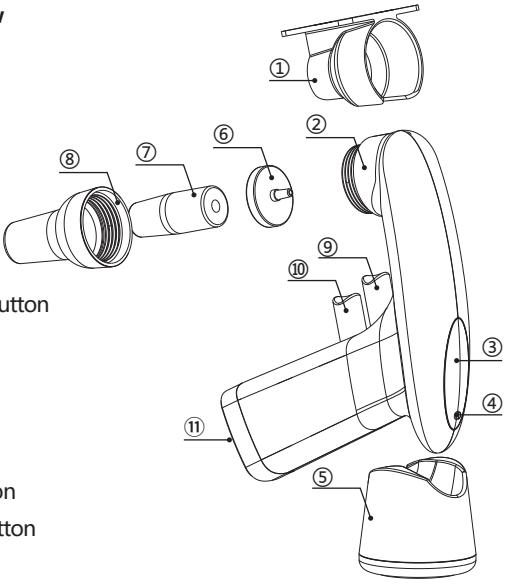
Unpacking

- Unpack the device and check carefully
- If any damage during transportation was found, please make a damage report, and contact the forwarder.

Features

- PF-1200E is a battery-driven pipette filler. You can use glass or plastic pipettes in a volume range of 0.1 mL to 100mL.
- A pump generates under pressure or over pressure to aspirate or dispense the liquid. The liquid can also be dispensed solely via the atmospheric pressure.
- The aspirating and dispensing speed is controlled by how far the control buttons are pressed in.

Product overview



1. Wall holder
2. Housing
3. Display
4. Speed setting button
5. Table stand
6. Filter
7. Pipette gripper
8. Nosepiece
9. Aspiration button
10. Dispensing button
11. Charging port

Materials

NOTICE!

Aggressive substances may damage components, consumables and accessories.

- Check the chemical resistance before using organic solvents or aggressive chemicals.
- Only use liquids whose vapors do not attack the materials used.

The assemblies are composed of the following materials

Components	**Material**
Main housing,aspirating cone, speed setting button, aspiration button, dispensing button, wall holder, table stand	Acrylonitrile styrene acrylate copolymer(ASA) + Polycarbonate(PC)
Pipette adapter, tube (internal) sealing ring (internal)	Silicone
Filter	Polytetrafluoroethylene (PTFE)
Speed display screen	Polycarbonate(PC)

3. Operating instructions

Battery charging

Note! Improper charging causes the battery capacity to decrease.

The new battery is not full,and the new battery can only reach its maximum capacity after multiple discharges and recharges.

- Do not charge the battery in an overheated environment (>60°C).
- Only use the adapter included in the scope of supply to charge the battery.

The battery is low and must be charged as soon as possible.

The battery has an alarm and must be charged.

The status display blinks, and the rechargeable battery is being charged.

The battery is fully charged.

ⓘ The charging time depends on the remaining battery power. If the battery is fully drained, it will take about 2-3 hours to fully charge.

ⓘ The pipette filler can be used during the charging process.

ⓘ Please note that a depleted battery can cause the pipette to malfunction. We recommend that at a minimum you should change the battery every 3 years.

No operation for a long period

- Charge the battery completely if the pipette filler is not used for a longer period of time (> 4 weeks).
- Recharge the battery every 2 weeks.

Inserting the pipette

⚠ **WARNING!**

Glass pipettes are fragile and may cause severe cuts if they break.

- Do not use force to insert glass pipettes.
- Wear your personal protective equipment.
- Pick up the pipette from above and carefully sert it in the aspirating cone until it is positioned securely and air-tight (Fig.2).
- It is recommended to use the bioleader pipette with our product.

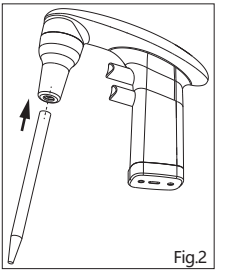


Fig.2

Speed control

- Choose a pipette of suitable capacity.
- Set the speed.
- Press the aspiration button and discharging button to adjust the aspirating or discharging speed.

1	2	3	4
1 -2ml	5-10ml	10-25ml	50-100ml

Recommended speeds

Aspirating liquid

NOTICE! Damage to device due to missing or damaged filter.

• Do not use the pipette filler if the filter is not inserted.

• Replace the filter if it is damaged.

1. Choose a suitable speed.
2. Immerse the pipette in the liquid.
3. Slowly press and hold the aspiration button.
4. Wipe the pipette on the inner wall of the container and remove it.

(Fig.3)

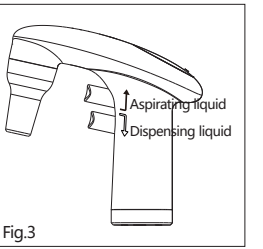


Fig.3

Dispensing liquid

1. Hold the pipette horizontally and place it on the inner wall of the container.
2. Press the dispensing button lightly.
3. A zero speed selection on dispense enables gravity dispensing.

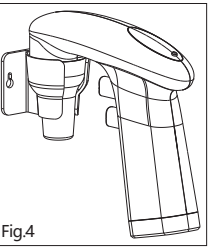


Fig.4

Application of wall holder

Hang the pipette filler on the wall holder.

(Fig.4)

Application of table stand

Place the pipette filler on the table stand.

(Fig.5)

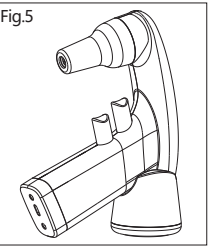


Fig.5

4. Maintenance

Disassemble the pipette adapter and filter

If liquid has entered the pipette adapter, the aspiration capacity may be decreased, or the components may be damaged. To clean or change the components, the aspirating cone should be taken off.

1.T urn the aspirating cone counterclockwise and remove it.

2. Remove the pipette adapter.

3. Remove the filter from the pipette filler.

Cleaning

Clean the pipette filler

Special servicing is not required.

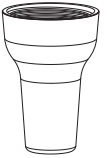
NOTICE! Damage to the device due to autoclaving.

• Do not autoclave the pipette filler.

To clean contaminated surfaces, proceed as follows:

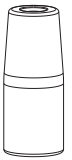
• Wipe the housing using a damp cloth.

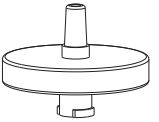
• Disinfect surfaces using alcohol (ethanol, propanol) or a disinfectant containing alcohol.

Aspirating cone	
	• Can be wiped using a damp cloth • Can be disinfected using alcohol (ethanol, propanol) or a disinfectant containing alcohol • Can be rinsed with demineralized water

Cleaning the components

The following components can be cleaned or autoclaved as described below (121 °C, 1 bar positive pressure for 20 minutes).

Pipette Adapter	
	• Can be rinsed with demineralized water • Can be autoclaved

Filter (PTFE0.45µm)	
	• To be disposed of if contaminated • Cannot be cleaned • Can be autoclaved once • Can be replaced

Replacing the filter

1. Push the wide opening of the filter into the narrow opening of the pipette adapter.
2. Guide the aspirating cone over the pipette adapter and turn it until it engages.
3. Rotate the aspiration cone to tighten.

(Fig.6)

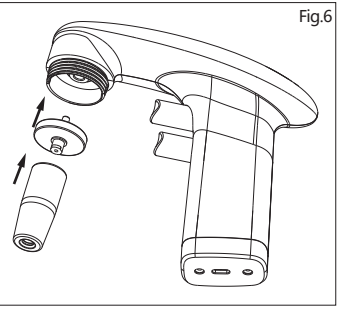


Fig.6

Checking the leak tightness

1. Insert the pipette.
2. Fill the pipette with water.
3. Hold the pipette vertically.
4. Observe the pipette outlet for approx. 30 seconds.

(!) Do not touch the pipette. Do not press the control buttons.

No water may be allowed to escape.

5. If water escapes, disassemble, and carefully reassemble the filter.

Spare Parts List

Name	Part No#
1,600 mAh Battery	3.3.523040015
Filter	3.1.305105000
Pipette gripper	3.4.616500300
Sealing	3.4.616500400

5.Troubleshooting

General errors

Problem	Cause	Solution
The pipette filler does not work after turning on	The battery is out of power	Charge the device, and restart the pipette filler
Liquid can not be aspirated	Wrong speed setting	Check if the speed is at 0 Please choose speed 1-4
Aspiration capacity reduced	Filter gets wet or low power	Replace the filter or charge the device

Liquid

Problem	Cause	Solution
Liquid drips out of the pipette	Pipette is not inserted far enough	Continue to carefully insert the pipette
	Pipette is damaged	Replace the pipette
	Liquid column is too high Speed is too low.	Slowly press the aspirating button down further
Bubble formation in the pipette during liquid aspiration	Speed is too high	Choose proper speed, and press aspirating button lightly

6. Technical data

Pipette Type	Glass or Plastic Pipette (0.1-100ml)
Speeds	4 Levels
Noise	<50db
Display	LCD
Dimension(L*W*H)	56*146*40mm
Weight	235g
Permissible Ambient Temperature	5-40°C
Permissible Relative Humidity	10%-95%, No-condensation
Atmospheric Pressure	79.5 kPa-106 kPa
Adapter Input Voltage	100-240V AC
Adapter Frequency	50/60HZ
Adapter Output Current	2 A
Adapter Output Voltage	5VDC
Battery	Lithium-ion
battery Voltage	3.7V
Battery Capacity	1600mAH
Battery Life	About 10h
Battery Charging Time	About 2h
Battery Weight	About 40g

7. Transport, storage and disposal

Decontamination before shipment

⚠ CAUTION!

Use of a contaminated device may result in personal injury and damage to the device.

- Clean and decontaminate the device in accordance with the cleaning instructions before shipping or storage.

Hazardous substances are:

- solutions presenting a hazard to health
- potentially infectious agents
- organic solvents and reagents
- radioactive substances
- proteins presenting a hazard to health
- DNA

Transport

Ambient Temperature	Relative Humidity	Atmospheric pressure
-20°C~+60°C	<75%	30kPa-106kPa

Storage

Ambient Temperature	Relative Humidity	Atmospheric pressure
<1 month:-20°C~+45°C <6 months:-10°C~+35°C Recommended storage temperature:25°C	<75%	70kPa-106kPa

8. Warranty

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 12 months from the date of dispatching. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation. For claims under the warranty,please contact your local supplier or us directly.

LA WAVE

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