



Eppendorf Easypet 4421

Instruction Manual · Mode d'emploi
Manual de Instrucciones

eppendorf

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1 Safety precautions

General information

- 1) **Before operating the device, please read this instruction manual!**
- 2) Please act in accordance with all danger warnings and safety regulations (e.g. wear protective clothing, gloves and eye protection).
- 3) Observe the data of the reagent manufacturers.
- 4) Observe extreme caution when dispensing caustic, poisonous, radioactive or hazardous chemicals.
- 5) Do not operate or load the device in a hazardous or flammable environment.
- 6) Do not pipet highly flammable, extremely flammable and explosive liquids.
- 7) Avoid injuries caused by chemicals. Always ensure that the pipet is facing away from the body.
- 8) Use only original manufacturer's parts and accessories.
- 9) Always ensure that your work represents no danger to others.
- 10) In the event of disturbances, stop pipetting immediately and follow the instructions for maintenance and troubleshooting. Never use force on the device.
- 11) Do not autoclave the device!

Transformer and NiCd batteries

- 1) Only the original transformer may be used to charge the NiCd batteries.
- 2) The transformer may only be used together with this device.
- 3)  The three NiCd batteries in the grip should not be replaced by other types of battery (in particular **no primary cells**).
- 4) When disposing of the NiCd batteries, please observe the battery disposal regulations.

Warning! Incorrect handling of the device or batteries (mechanical destruction, short circuiting, overheating etc.) can cause the device to explode!

2 Design principle / 3 Operational limitations

2 Design principle

The Easypet 4421 facilitates pipetting with measuring pipets, volumetric pipets and blow-out pipets made of glass or plastic in the volume range 0.1 mL to 100 mL.

If handled correctly, the device itself does not come into contact with any liquid. The vacuum or excess pressure necessary for aspirating and dispensing liquid is generated by a pump.

The pipet is emptied by means of normal atmospheric pressure. Blow-out pipets are emptied with the aid of the pump.

The aspirating or dispensing speed of the pump can be set using the pump speed control. This accelerates the aspirating/dispensing speed of large-volume pipets and slows down the aspirating/dispensing speed of small-volume pipets.

3 Operational limitations

Remove the components from the shipping carton, examining them carefully for breakages, defects or shortages. Do not discard packaging if breakage is found. Make certain that you have a reservoir to fit the dispenser.

The Easypet must not be used with solvents whose vapors attack silicon, ABS + PC, POM, NBR or PVDF.

Warning! Do not pipet highly flammable, extremely flammable and explosive liquids.

Operational and storage temperatures: + 10 °C to + 35 °C.

Store in a cool, dry place.

4 Control elements / Individual components

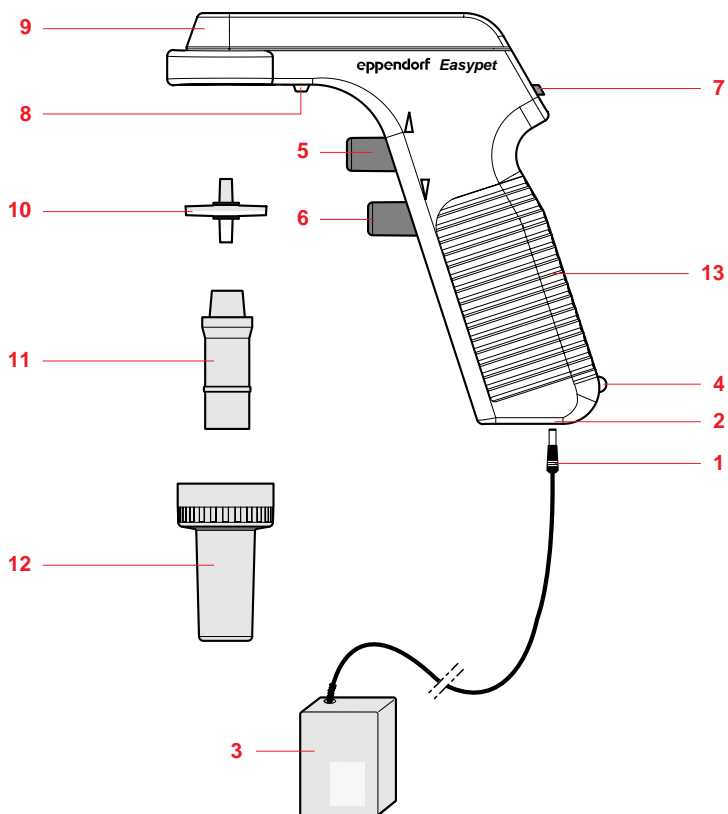


Fig. 1

- | | |
|----------------------------|---------------------------------------|
| 1) Plug of the transformer | 8) Release button for aspirating cone |
| 2) Electrical connection | 9) Pressure-adjustment inlet |
| 3) Transformer | 10) Membrane filter |
| 4) Charging control lamp | 11) Adapter |
| 5) Aspirating button | 12) Aspirating cone |
| 6) Dispensing button | 13) Battery compartment |
| 7) Pump speed control | |

5 Charging the batteries

Before the device is used for the first time, the NiCd batteries should be fully charged (for approximately 12 hours).

To insert the batteries, slide open the battery compartment located in the grip. The designation of the model (KR 15/30) can be found on the lid.

Insert the batteries into the battery compartment in accordance with the markings shown.

The duration of the charging process depends on the charge status of the NiCd batteries.

The charging time for a completely empty battery is 12 hours.

If using the device daily, do not charge the battery until the charge control lamp (4) has lit up. A residual charge of approximately 15 % is available when the lamp is lit.

The device can be operated during recharging.

Caution: The Easypet should only be used with the transformer supplied.

We do not honor any warranty or accept any responsibility in the event of damage caused by the use of other chargers.

Before plugging in the device, check that the input voltage listed on the transformer is identical to the main power supply at the outlet.

- Connect the plug of the transformer (Fig. 1 – 1) to the electrical connection on the grip (Fig. 1 – 2).
- Connect the transformer (Fig. 1 – 3) to the main power supply. The red charge control lamp (Fig. 1 – 4) will turn off.

Note: When fully charged, the device can be operated for approx. seven hours.

6 Mode of operation

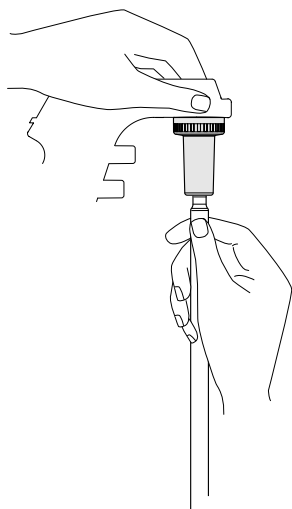


Fig. 2

When the pump is used to fill and empty the pipet, the aspirating- or dispensing speed can be selected using the pump speed control (Fig. 1 – 7) (I = slow, IIIII = fast).

Inserting the pipet

Holding the pipet at the top, push it into the aspirating cone until it is securely and tightly fastened.

Caution: Do not use force when inserting the pipet. Thin pipets in particular can break and cause injury.

Filling the pipet

- Immerse the tip of the pipet into the liquid.
- Press the aspirating button \triangle (Fig. 1 – 5). Fill the pipet to just above the desired mark.
- Wipe the outer surface of the pipette to remove residual liquid. Place the tip of the pipet against the side wall of the container.
- Press the dispensing button ∇ (Fig. 1 – 6) slowly until the meniscus is exactly level with the desired mark.

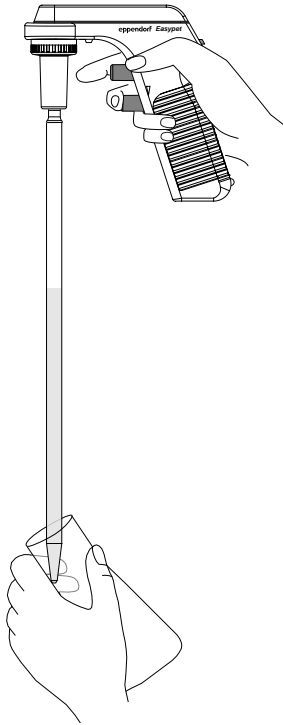


Fig. 3

Emptying the pipet (Fig. 3)

Flow out

- Place the pipet tip at an angle against the inside of a receiving vessel and press in the lower button without engaging the pump to allow the liquid to flow out. The dispensing speed can be regulated using various degrees of finger pressure.

Blow out

- Press in the lower button completely. This activates the pump and the liquid is blown out.
- The dispensing speed can be set using the pump speed control (Fig. 1 – 7).

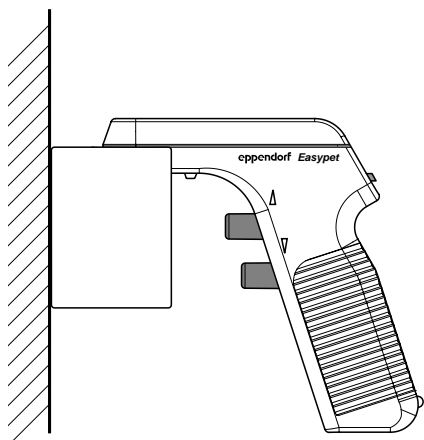


Fig. 4

The Easypet can be stored in a wall holder (Fig. 4).

To fasten the wall holder, remove the protective foil from the back and press the wall holder against a clean wall. Pull the wall holder to one side to remove it from the fastening strip. The fastening strip can then be removed from the wall with the aid of commonly-used solvents.

8 Cleaning / Maintenance

The Easypet is normally maintenance-free. The housing can be wiped occasionally using a moist cloth.

The aspirating cone (Fig. 1 – 12) and the adapter (Fig. 1 – 11) are autoclavable.

8.1 Exchanging the filter / Cleaning the adapter

Caution: When cleaning and exchanging the filter, wear hand and eye protection to avoid the risk of splashes and contamination.

If liquid has entered the aspirating cone or if the aspirating efficiency has decreased, proceed as follows:

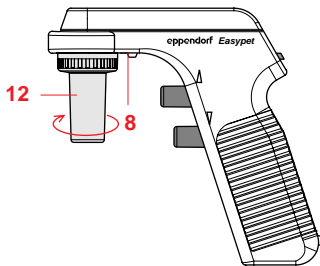


Fig. 5

- Hold the pipet over a container and remove the pipet. Allow any liquid to drain from the pipet.
- Hold down the release button (Fig. 5 – 8). Loosen the aspirating cone (Fig. 5 – 12) by turning it counterclockwise and pull down to remove.

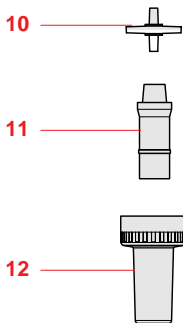


Fig. 6

- Remove the **membrane filter** and **adapter**.
- Rinse the **adapter** with demineralized water and allow to dry at room temperature.
- Push a new **filter** into the adapter and then reassemble the device (Fig. 6). Check the device for leaks (see Sec. 8).

Note: Alternatively, it is possible to use filters with a pore size of 0.2 μm .

8.2 Changing the batteries

Slide open the lid of the battery compartment in the grip (Fig. 1 – 13) and remove the batteries. Insert new batteries. Orient according to marking in the battery compartment.

Caution: When disposing of the NiCd batteries, replace the complete set of batteries. Please observe the latest regulations on battery disposal!

9 Checking for leaks

When the pipet has been filled, no liquid should drip from the pipet unless the appropriate buttons are pressed. If this is not the case, remove the adapters and filter and carefully reassemble, or replace worn parts, if necessary.

10 Troubleshooting

Error	Cause	Solution
Reduced aspirating efficiency.	- Filter wetted.	- Replace filter.
	- Batteries discharged.	- Connect the Easypet to the transformer. Charge batteries.
Reduced operating time with fully-charged batteries.	- Batteries worn.	- Replace batteries.
Pipet drips.	- Pipet not inserted far enough.	- Carefully insert pipet further.
	- Adapter or pipet damaged.	- Replace adapter or pipet.
Pipet loose.	- Adapter damaged.	- Replace adapter.

If the problems cannot be solved with the aid of the recommendations above, send the Easypet to your appointed Eppendorf distributor.

11 Ordering information

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Eppendorf Easypet with transformer incl. wall holder and two spare membrane filters	022230204
Adapter	022236008
Aspirating cone	022236105
Membrane filter, 0.45 µm, sterile, hydrophobic, PTFE (pack of 5)	022231006
NiCd battery KR 15/30 (pack of three)	022236202
Transformer, 120 V / 60 Hz	022236300
Wall-mountable holder	022230905

Caution: Please only use the accessories recommended by Eppendorf. Using spare parts and disposables which we have not recommended can reduce the precision, accuracy and life of the devices. We do not honor any warranty or accept any responsibility for damage resulting from the use of non-recommended parts.

Quality assurance

The Eppendorf Easypet has been manufactured and tested under stringent quality controls to ensure its accuracy and precision. It is guaranteed against defects in workmanship or faulty parts

for 12 months

after the date of delivery. Please refer to the notes in this instruction manual.

If, in spite of our extensive controls, the instrument is defective, please return it to your Eppendorf distributor.