MAXX®

Mess- und Probenahmetechnik GmbH

User Manual
for
Portable Sampler
P6 L / P6 Mini MAXX

P6 L

P6 Mini MAXX

P6 0250036E 07- 2023

Innovation made in Germany

Access code for programming and settings

Password:	6299
Your Password:	

Table of Contents

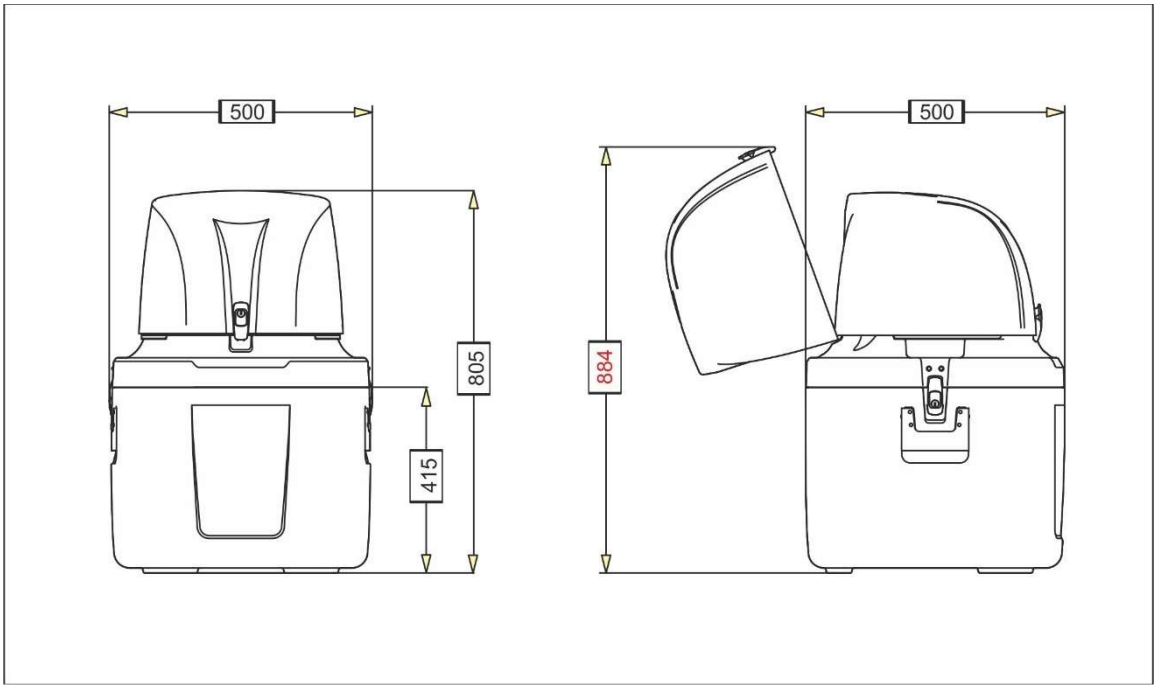
Section 1 SPECIFICATIONS

TECHNICAL SPECIFICATION			
		P6 MINI MAXX	**P6 L MAXX**
Electric			
Power supply,			
	With integrated battery	12 V-9 Ah (DC)	
	With optional power pack	110–230 V/50–60 Hz.	
Rating		8 AT	
Power consumption		Peristaltic Pump: approx. 70VA / **Vacuum System** approx. **15VA**	
Environment			
Medium temperature		0 to 40 °C [32 to 104 °F]	
Ambient temperature		0 bis 50 °C [32 bis 113 °F]	
Suction height		Vacuum: 6,5 m [20 ft], optional < 8 m [26 ft]	
		Peristaltic pump: max. **8 m** [29 ft.] (at 1013h Pa)	
General specifications			
Maintenance requirements		no typical maintenance / -cycles	
Weight (without battery, without bottles)			
	Top part	approx. 5 kg	approx. 6,5 kg
	Bottle compartment	approx. 3,5 kg	approx. 8,5 kg
	Complete	approx. 8,5 kg	approx. 15 kg
Dimensions (H X D) in mm			
	Top part	400 x 333	500 x 377
	Bottle compartment	400 x 310	500 x 415
	Complete	400 x 605	500 x 805
	With lid opened (90° / 110°)	90° 400 x 709 110° 400 x 685	90° 500 x 884 110° 500 x 876
Certification			
Certification		CE, sampling in accordance with ISO 5667-10, EN 16479	

These are subject to change without prior notice!

1.1 Dimension

P6 L MAXX



P6 MINI MAXX

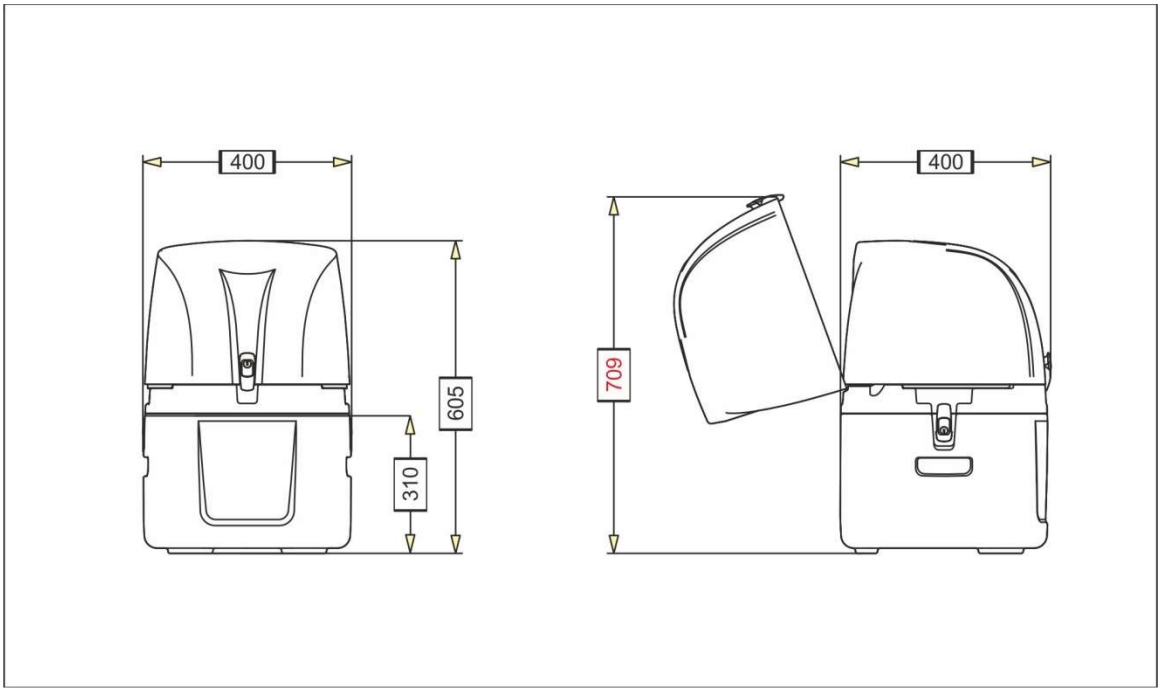


Figure 1 Dimension

Section 2 GENERAL INFORMATION

2.1 Safety information

Please read this entire manual before unpacking, setting up, or operating this equipment. Pay attention to all danger and caution statements. Failure to do so may result in personal injury or damage to the instrument.

To ensure that the protection provided by this equipment is not impaired, do not use or install this equipment in any manner other than that specified in this manual.

2.1.1 Use of hazard information

DANGER

Indicates a potentially or imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

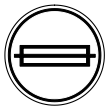
Indicates a potentially or imminently hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially or imminently hazardous situation that could result in minor or moderate injury.

Important note: *Information that requires special emphasis.* ***Note:*** *Information that supplements points in the main text.*

2.1.2 Precautionary labels

Read all labels and tags attached to the instrument. Failure to do so may result in personal injury or damage to the instrument. A symbol, if noted on the instrument, will be included with a danger or caution statement in the manual.

	This symbol, if noted on the instrument, references the user manual for operation and/or safety information.
	This symbol, when noted on a product enclosure or barrier, indicates that a risk of electrical shock and/or electrocution exists.
	This symbol may appear on the product and indicates the need for protective eye wear.
	This symbol may appear on the product and identifies the connection point for the protective ground.
	When this symbol appears on the product, it identifies the location of a fuse or a current limiter.
	Electrical equipment marked with this symbol may not be disposed of in European domestic or public disposal systems after 12 August 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of-life equipment to the manufacturer for disposal at no charge to the user ***Note:*** *For return for recycling, please contact the equipment manufacturer or supplier for instructions on how to return end-of-life equipment, manufacturer-supplied electrical accessories, and all auxiliary items for proper disposal.*

2.2 General Information

2.2.1 Areas of application

- The equipment is used for sampling aqueous liquids with a temperature of 0 °C to 40 °C (refer to Section 1 Specifications, page 5).
- The sampler is designed for operation in non-hazardous areas (no explosion risk).
- The sampler can be operated at ambient temperatures from 0°C to +50°C.
- Sampling from pressurized lines is not possible.
- The device is weather-proof and suitable for outside operation.

2.2.2 Functional description

The equipment provides temporary storage for aqueous liquids of a specified volume so that they can be analyzed.

Danger

The device may only be used for the purpose described above.
Other applications may interfere with the protection supported by the device. In particular, the use of non-aqueous substances is not permitted.

2.2.3 Used Materials

In our devices different materials are used which come into contact with the sample.

These are depending on the device type PVC, PC, PS, glass, stainless steel, silicone or PE.
Depending on analysis requirements, we can also offer you alternative materials, e.g. different types of silicone or Teflon

2.3 Product contents

The equipment is supplied with a tube and brief operating instructions. The **necessary charger** is **optional** and available in **IP65** (Part.No.0010397)

Note: We expressly point out, that not everything that is written or displayed in this manual is supplied with your device! The scope of delivery of your sampler corresponds to the delivery note

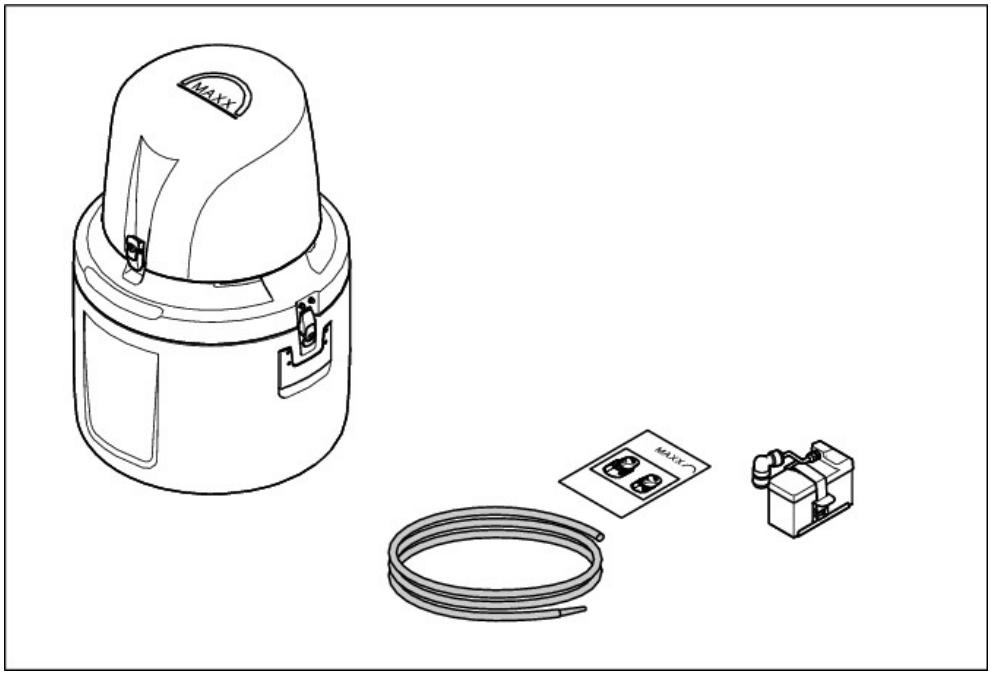


Figure 2 Scope of delivery (P6 L MAXX)

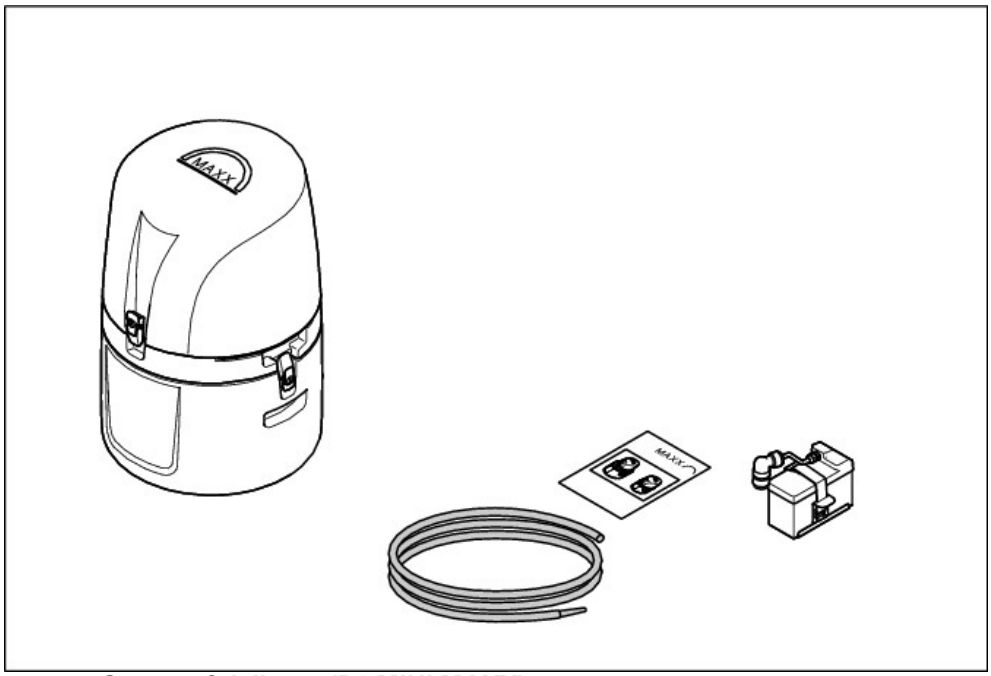


Figure 3 Scope of delivery (P6 MINI MAXX)

2.4 Transportation

ATTENTION

In order to avoid a damage of the device, the BATTERY **must** always be removed and transported separately.

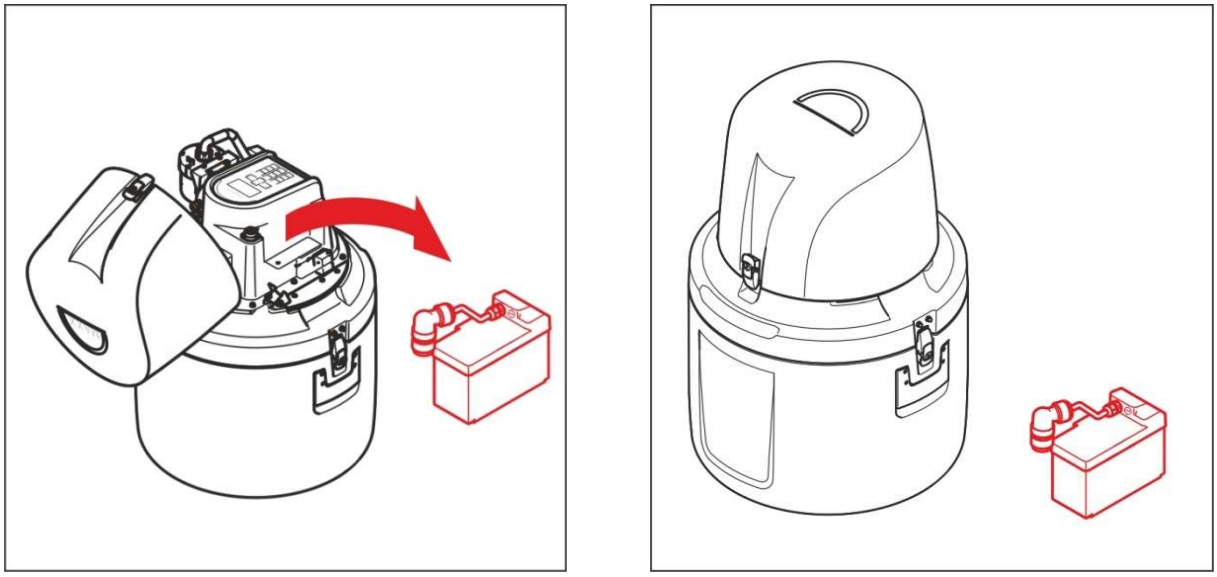


Figure 4 Remove the battery

If the device has to be shipped, use only the **original packaging**. Thus, the battery can be transported using the special carton feeder provided with the equipment.

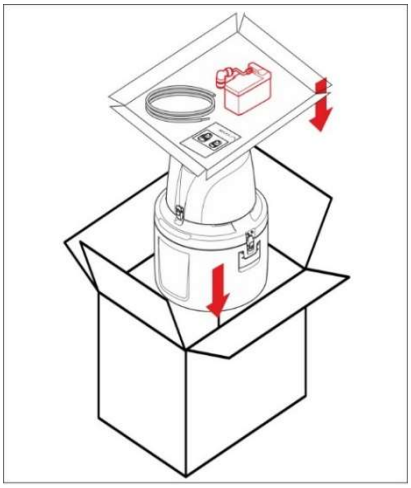


Figure 5 Transport - transport of battery and accessories separately into the carton

Danger

The carrying handles on the lower part of the device are not designed for carrying a complete device with filled bottles. The housing parts must be carried separately and the sample bottles have to be emptied before.

Section 3 INSTALLATION

DANGER

Only qualified experts should conduct the tasks described in this section.

DANGER
Select an appropriate installation location for the instrument.

Make sure that the surface is level and level to ensure a safe stand.

Plan how to lay ***cables and tubes and their path in advance. Lay the tubes, data cables and power cables without any bends and so they do not pose a tripping risk.***

Sufficiently protect the electrical power supply against short circuits.

For the external power supply, always connect a residual-current circuit breaker (trip current max.: 30 mA) between the mains and the system.

If the equipment is to be installed outdoors, switch the overload protection between mains and system.

The device is designed for outdoor use. As long as the device is operated with battery power, unprotected use is also permitted in wet environments. In buffer mode with the charger connected, make sure that the charger has at least IP65. At the same time, the place of installation must be chosen so that the device is protected against direct weather influences.

3.1 Mechanical Installation

3.1.1 Required Tools

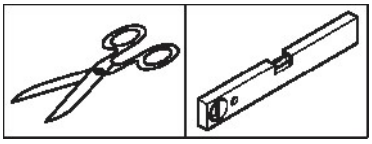


Figure 6 Required tools (P6 L and P6 MINI MAXX)

3.1.3 Installation location (P6 L and P6 MINI MAXX)

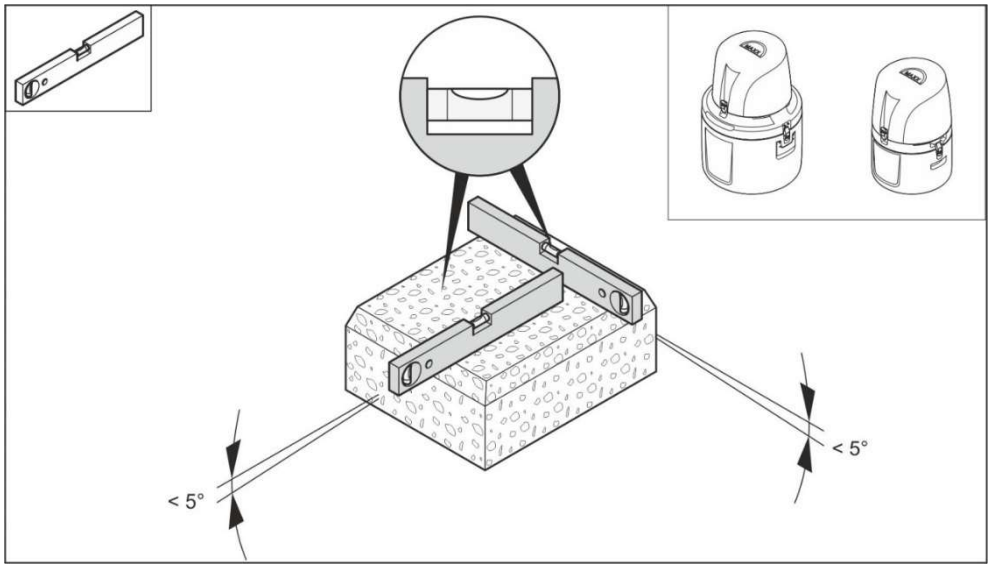


Figure 7 Select installation location (P6 L and P6 MINI MAXX)

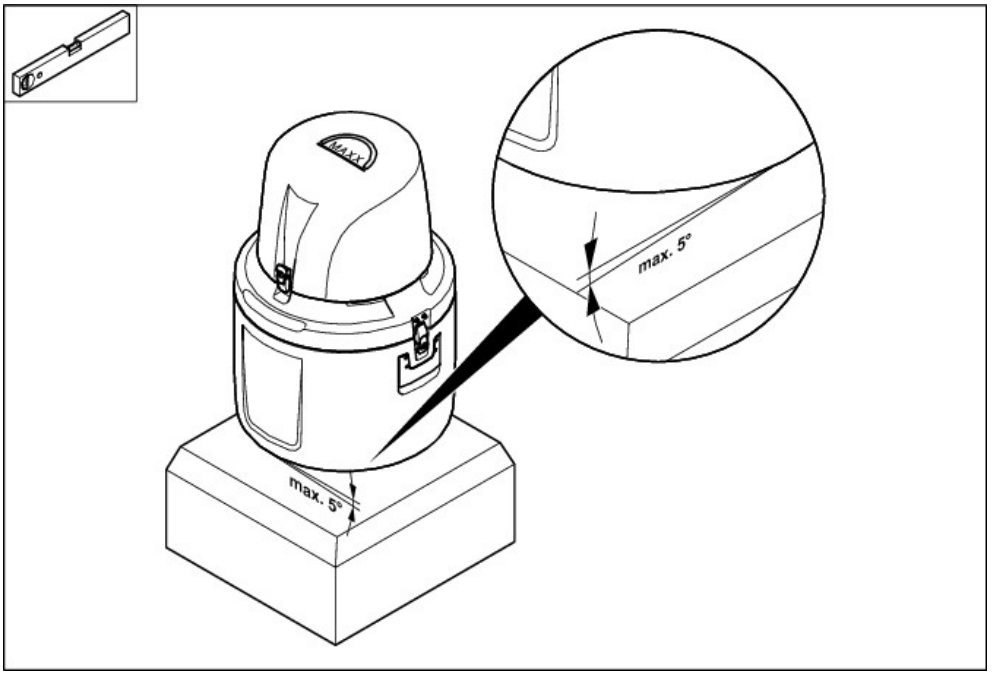


Figure 8 Position the equipment (P6 L and P6 MINI MAXX)

The sampler has always to be on a level surface!

3.2 Electrical Connections

DANGER
Only qualified experts should conduct the tasks described in this section.

The device is powered by the supplied battery.
To disconnect the device from the supply, the plug of the battery unit must be removed from the sampler

Make sure that the plug is always easily accessible, even during operation.

The device can be operated via a separate cable with a charger, parallel to the battery, in buffer mode, on the mains. As a charger, only one of the MAXX GmbH offered device are allowed to be used, considering the degree of protection.

3.2.1 Electrical Installation

3.2.1.1 Prepare the electrical installation

The device can be operated either
- in pure battery mode,
- in a mains buffer mode in connection with a Y-cable and charger, or
- in pure mains mode with a power supply unit.

3.2.1.1.1 Battery Operation

The device must be operated exclusively with the preconfigured MAXX battery (Part. No. 0901055) !

Charging the storage battery

The integral battery is a maintenance-free sealed lead-acid battery.

Charge the storage battery for **at least 5 hours** prior to the first use.

The charging time depends on the charge level of the battery. The charging current is 2 Ah, which means approx. 3-4 hours of charging time for an empty battery.
To avoid a total discharge, a protective mechanism is built-in, which automatically switches off the device when the voltage is too low.
The storage battery cannot be overcharged as the battery charger switches to compensation charge as soon as the battery is fully charged.
For longer periods of non-use, top up the charge regularly (connect the battery to the charger).
In any case, avoid a total discharge as otherwise the storage battery will be damaged

Use only the optional charger in IP65 (Part.No 0010397) to charge the battery.

Input: 100 – 240 V AC bei 50/60 Hz
Output: 12V DC / 2A

1. **Charging status indicator**:
The charging status is indicated by the **LED (1)**. As long as the battery is being charged, the LED flashes green.
When the battery is full, the LED lights up constantly green and the charger automatically switches automatically into Floating phase.

2. **Fault indicator**:
The charger recognises defective rechargeable batteries, a short circuit or a battery which has been connected with wrong polarity automatically. In this case the selected charging programme will not be started. **LED (2)** is on.

Insert the battery pack

To avoid any damage during transport, the battery pack is supplied separately.

(1) Open the cover, (2) insert the battery pack into the battery tray, (3) secure it with the strap and (4) connect the it with the plug

Figure 9 Insert the battery pack

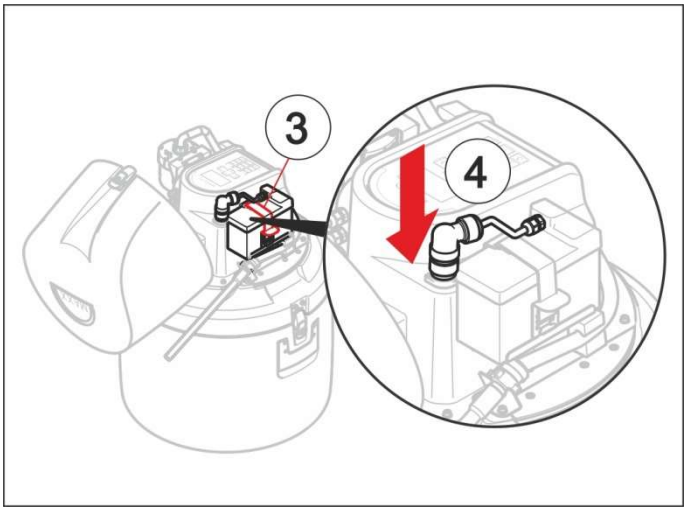


Figure 10 Fix the battery pack with the strap and connect the plug

3.2.1.1.2 Mains buffer operation with battery

The device can also be used in mains buffer mode. To do this, connect the optionally available Y-cable (item no. 0069810) as shown in Figures 11 and 12.
Please only use the charger (0010397) for mains buffer operation.
The advantage is that the device continues to run with the battery in the case of a mains voltage failure.

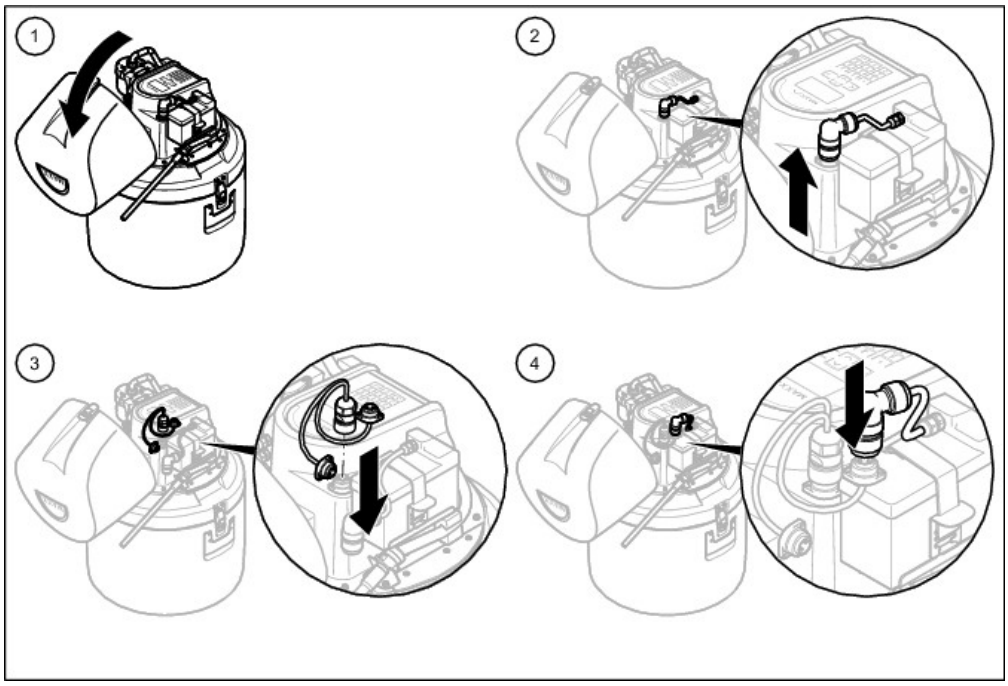


Figure 11 connect the Y-cable

Now connect the charger to the mains and, as the last step, connect it with the Y-cable, as shown in Figure 12

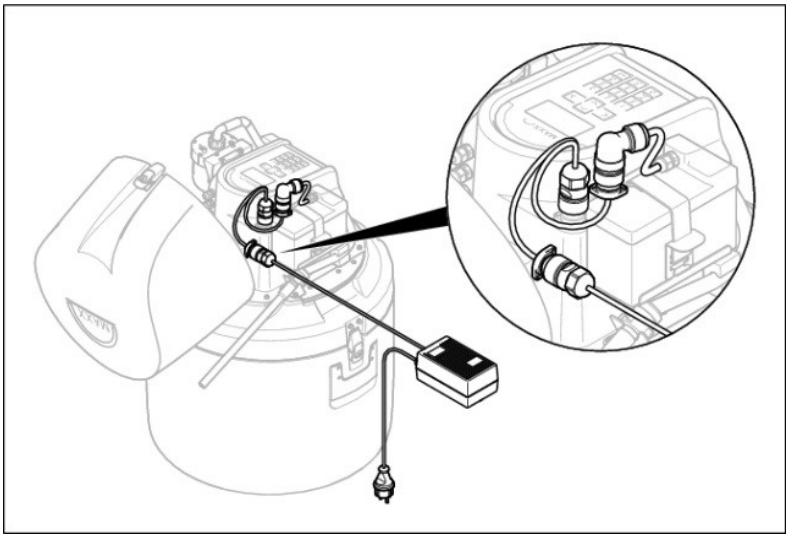


Figure 12 connect the Y-cable with the charger

3.2.1.1.3 Mains Operation

The device can also be operated directly from the mains without a battery, using the optionally available power supply (Part. No. 0010399)

The power supply has the following technical data:

Input: 100 – 240 V AC bei 50/60 Hz
Output: 12V DC / 7A

The power supply has to be plugged into the device directly (Figure 13).
When ready for operation, the LED (1) lights up green.

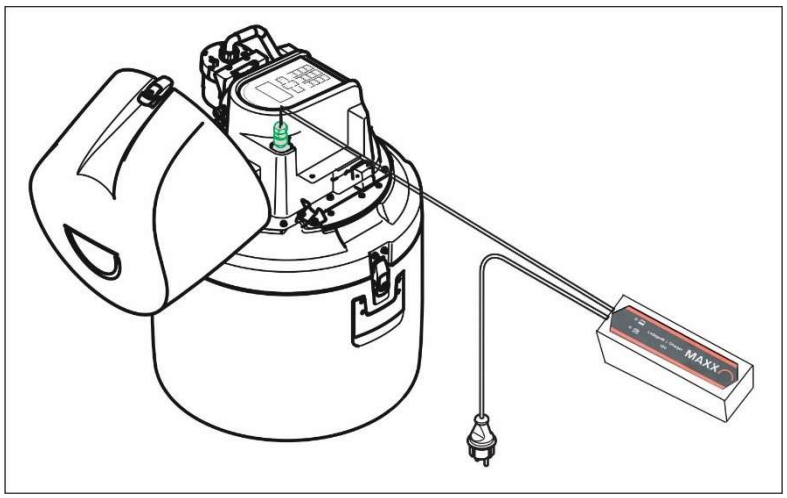


Figure 13 Connect the power supply directly

3.2.1.2 Wiring diagram

Please note:
- The assignment of the connections in the illustration below
- a fixed label at the signal cable shows the color to the related Pin-No.

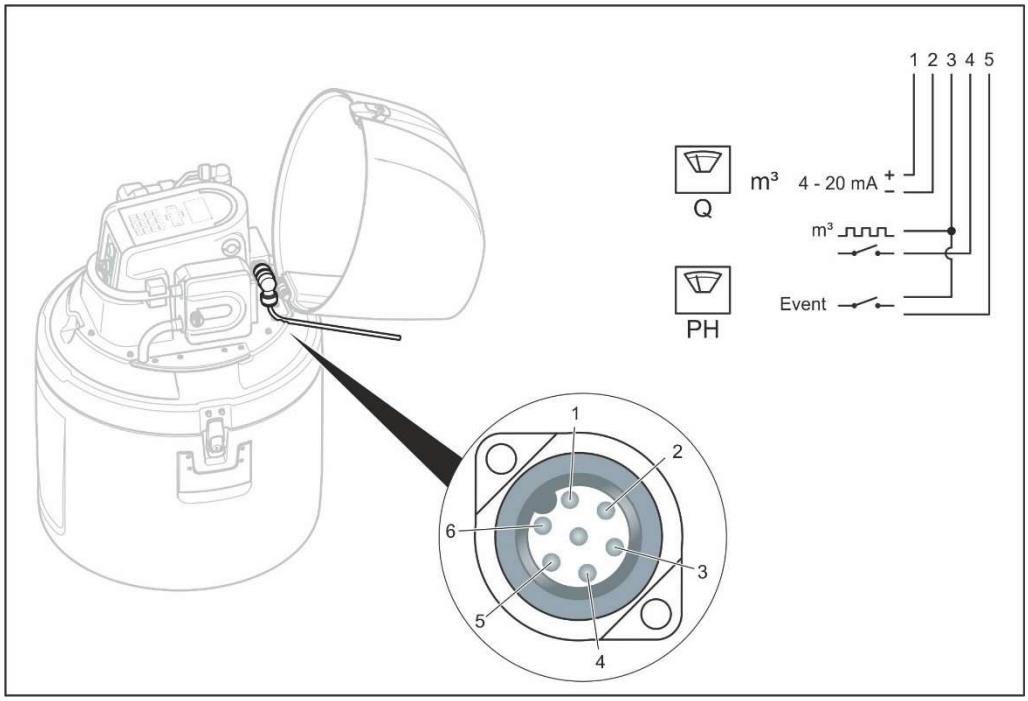


Figure 14 Connection plan for the optional signal cable (0069644)

Input signals	Pin	Color of wire
Analog **+**	1	Brown
Analog **-**	2	White
Com	3	Grey
Digital	4	Yellow
Event	5	Green
x	6	x

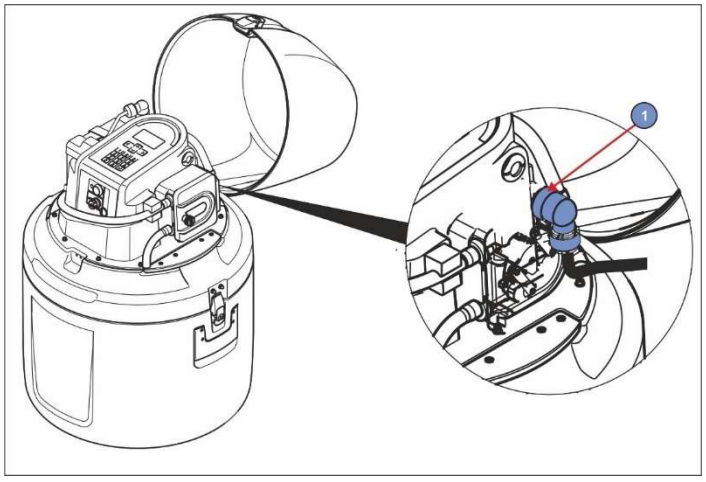


Figure 15 Connection (1) of the signal cable

3.2.1.3 Connection to a PC

The sampler is connected to a PC by means of a. MiniUSB interface cable (art. No. 0069793)
With the software “maxxwareConnect” to transfer the logged data to a PC.
As option is a LAN/WLAN/GPRS-UMTS board for remote communication also available.

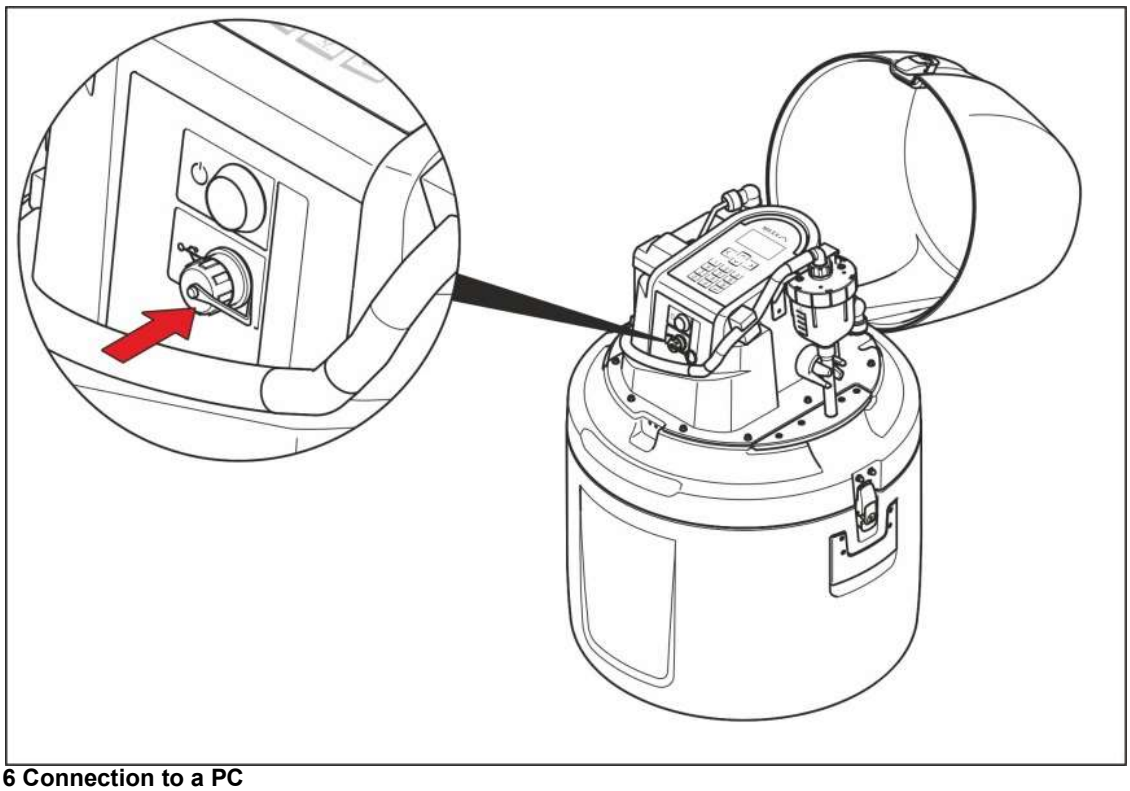


Figure 16 Connection to a PC

3.2.1.4 Version with / without lock

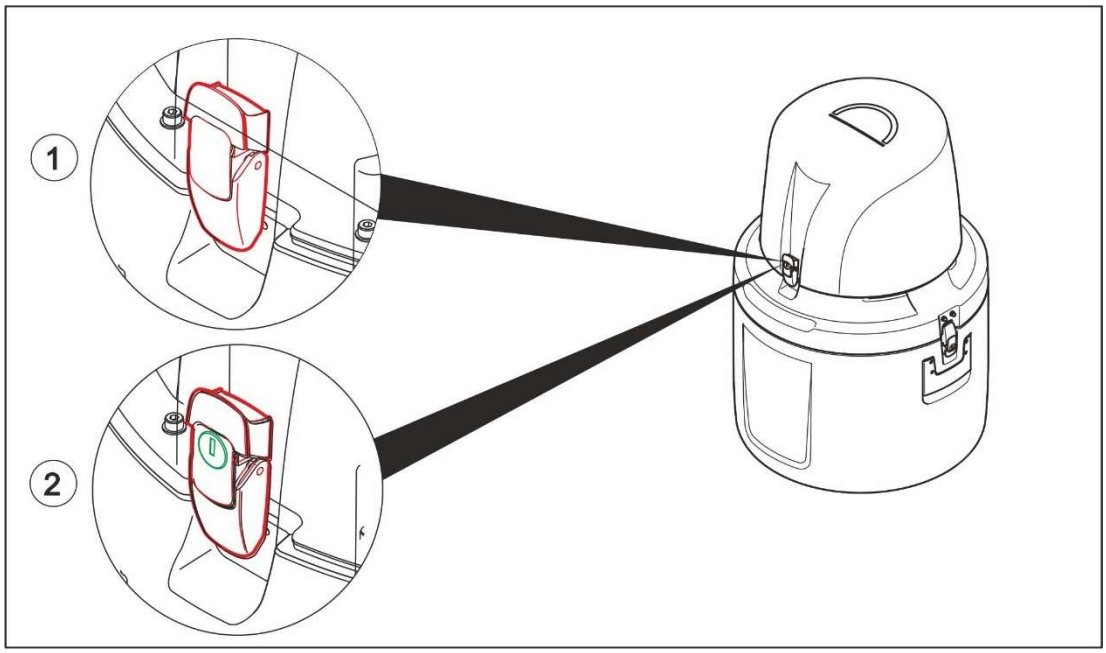


Figure 17 with/without lock

1= Standard version without lock
2= Version with key (lockable). All 3 closures are lockable

3.3 **Commission of the equipment**

3.3.1 Switch on the device

The device is switched on and off by the ON / OFF push button

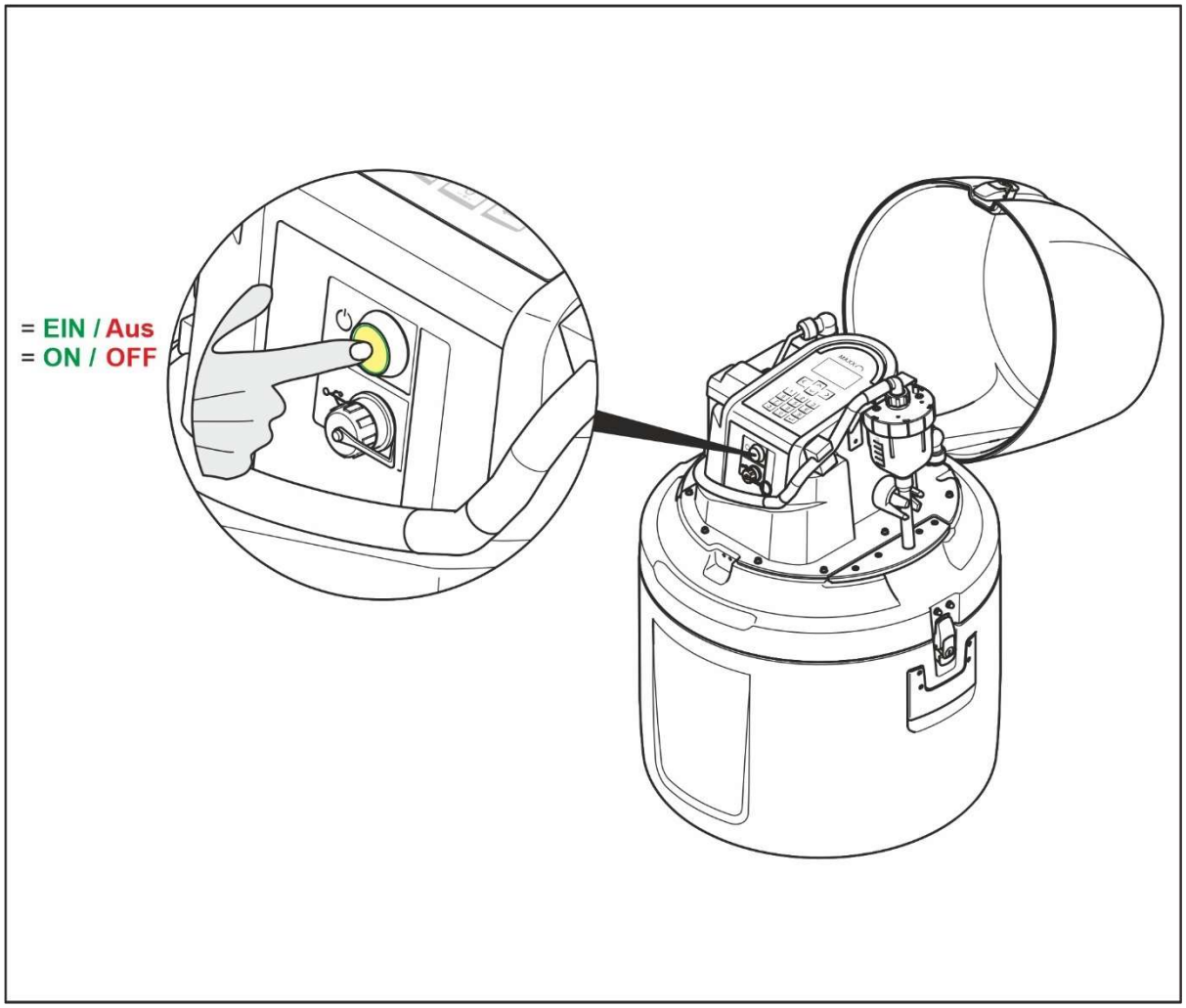


Figure 18 Switch-on and off

3.3.2. **Tube connection** and Positioning of the tubes

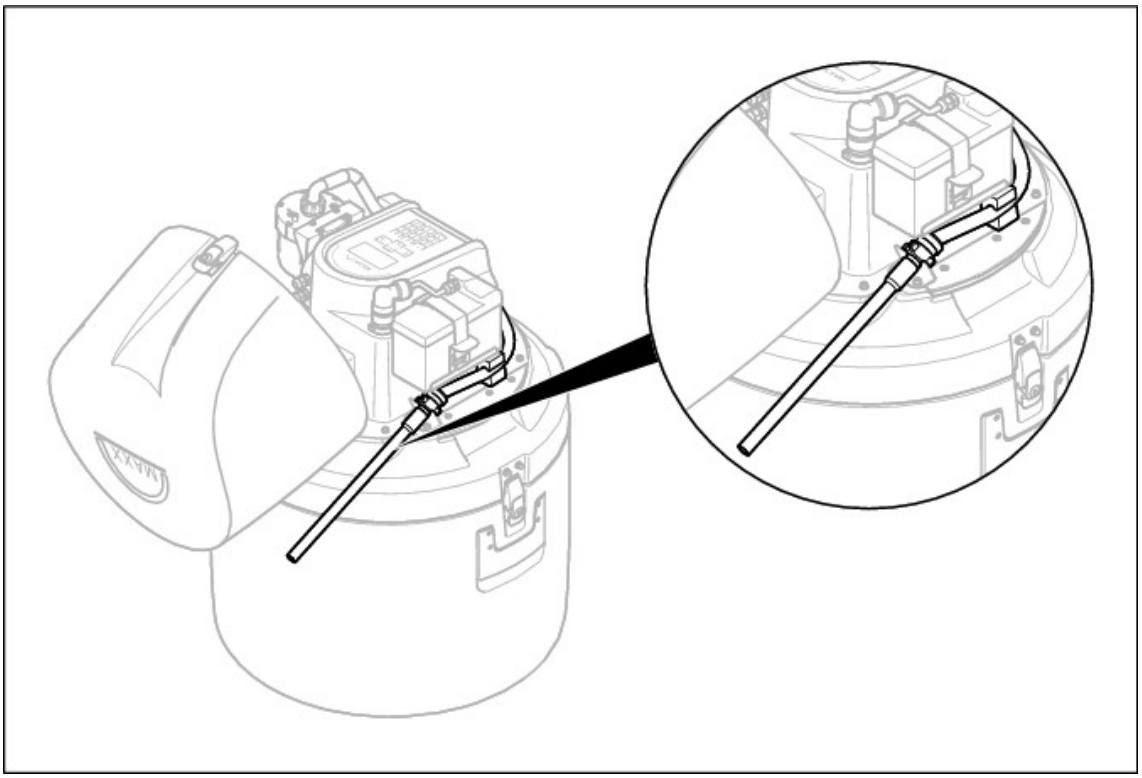


Figure 19 Connect the Intake tube

Positioning of the tubes according to the following installation diagram

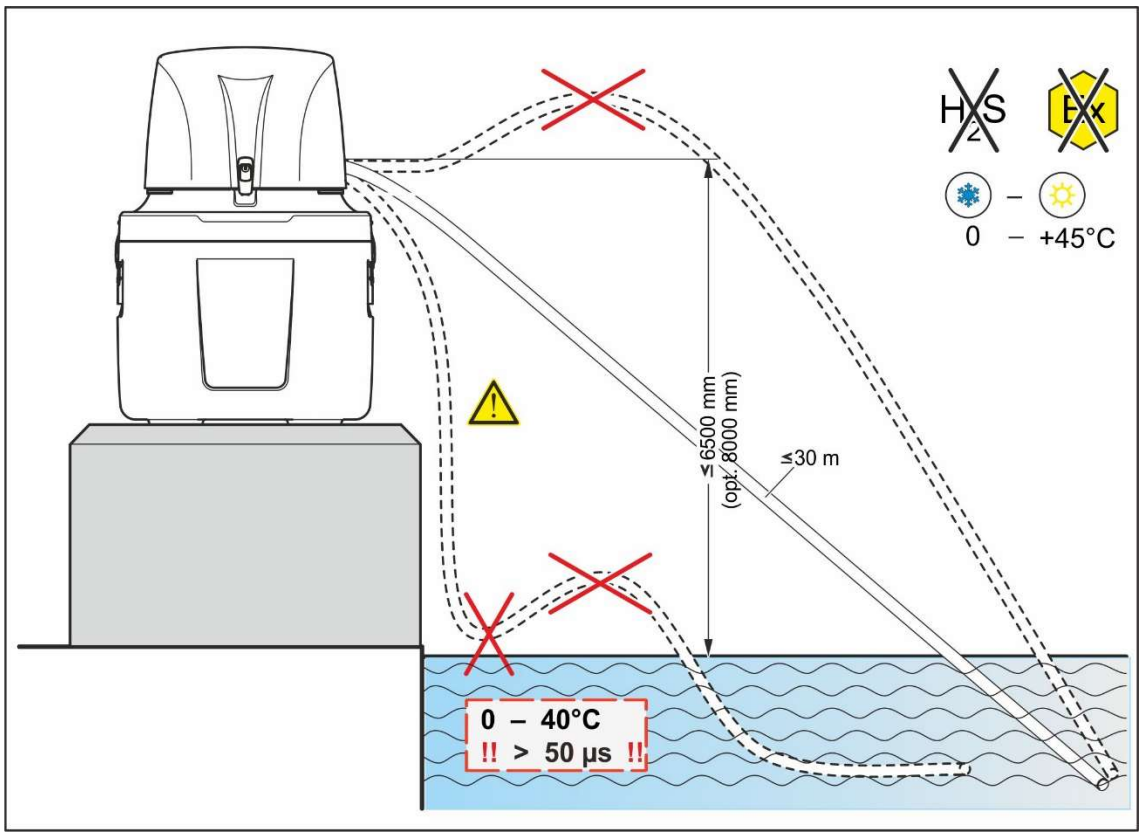


Figure 20 Installation diagram

3.3.3 Set the individual sample volumes

3.3.3.1 Vacuum –dosing vessel

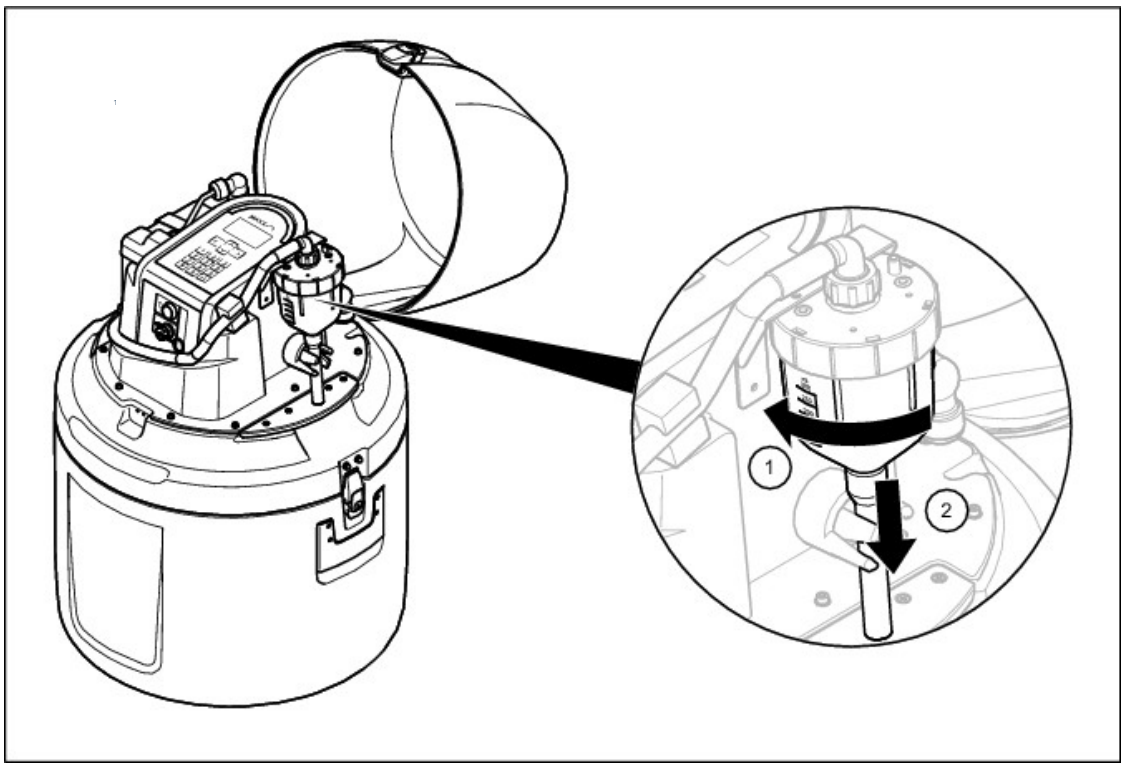


Figure 21 Unlock the bayonet cap on the plastic dosing vessel

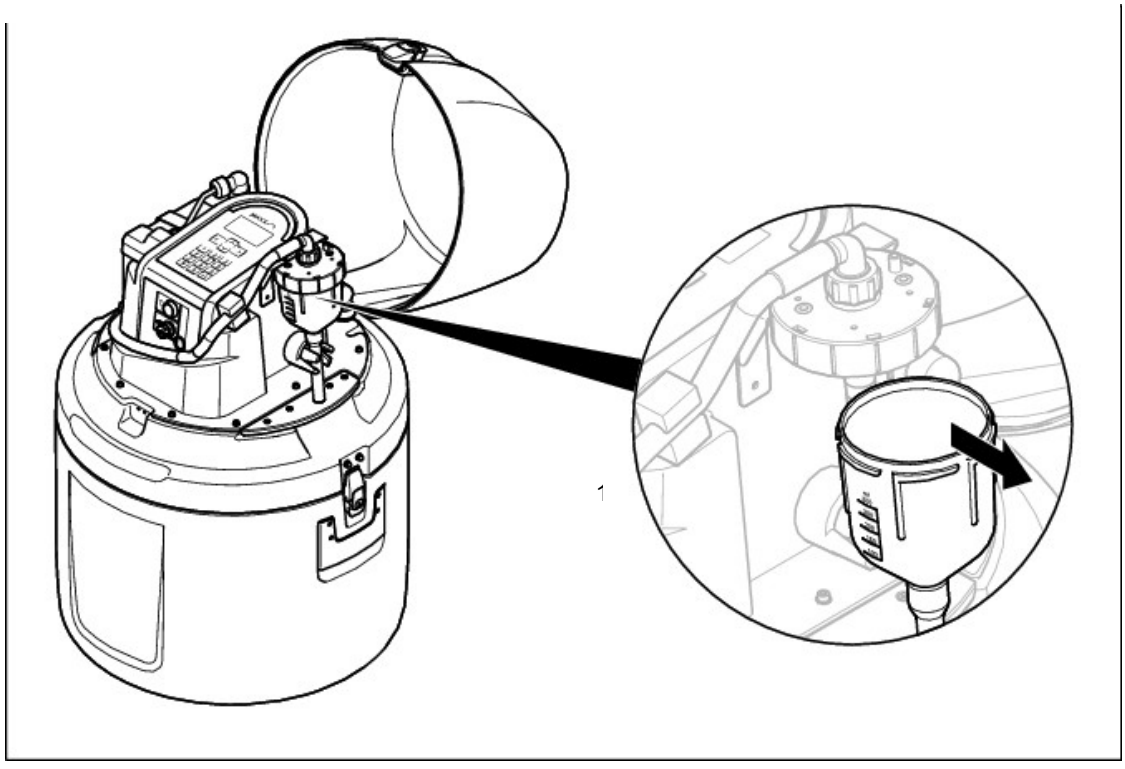


Figure 22 Remove the plastic dosing vessel

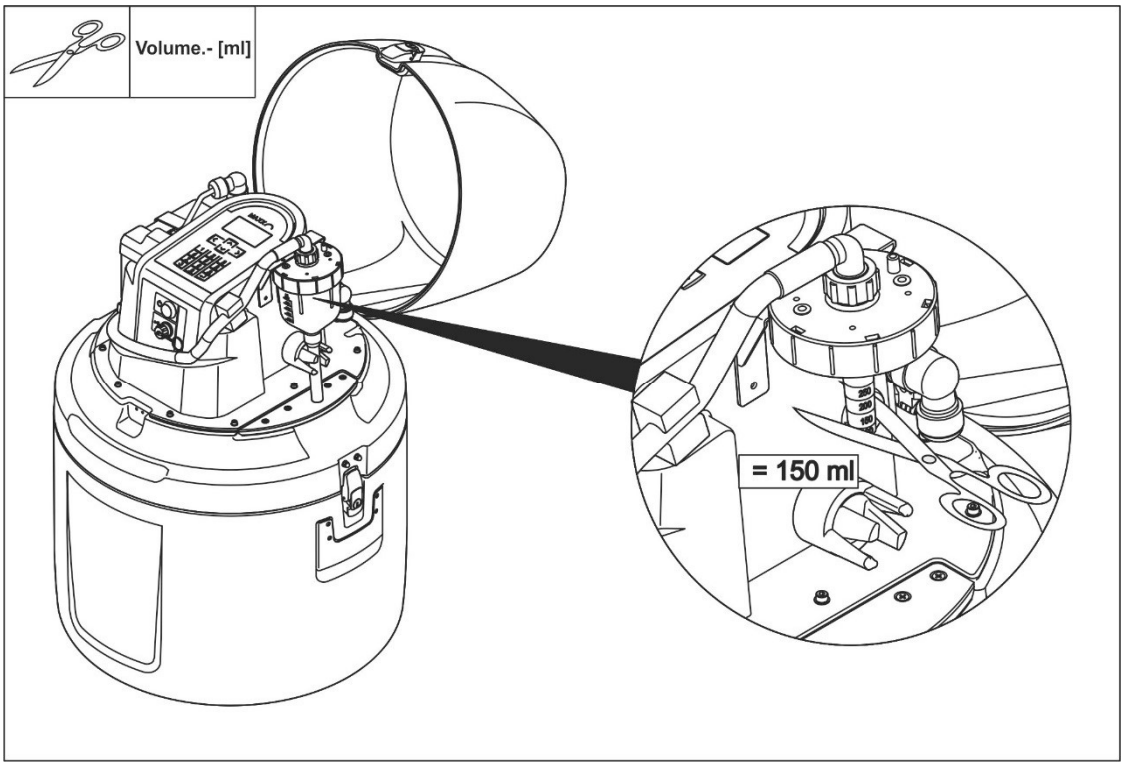


Figure 23 Cut the dosing tube to set the sample volume

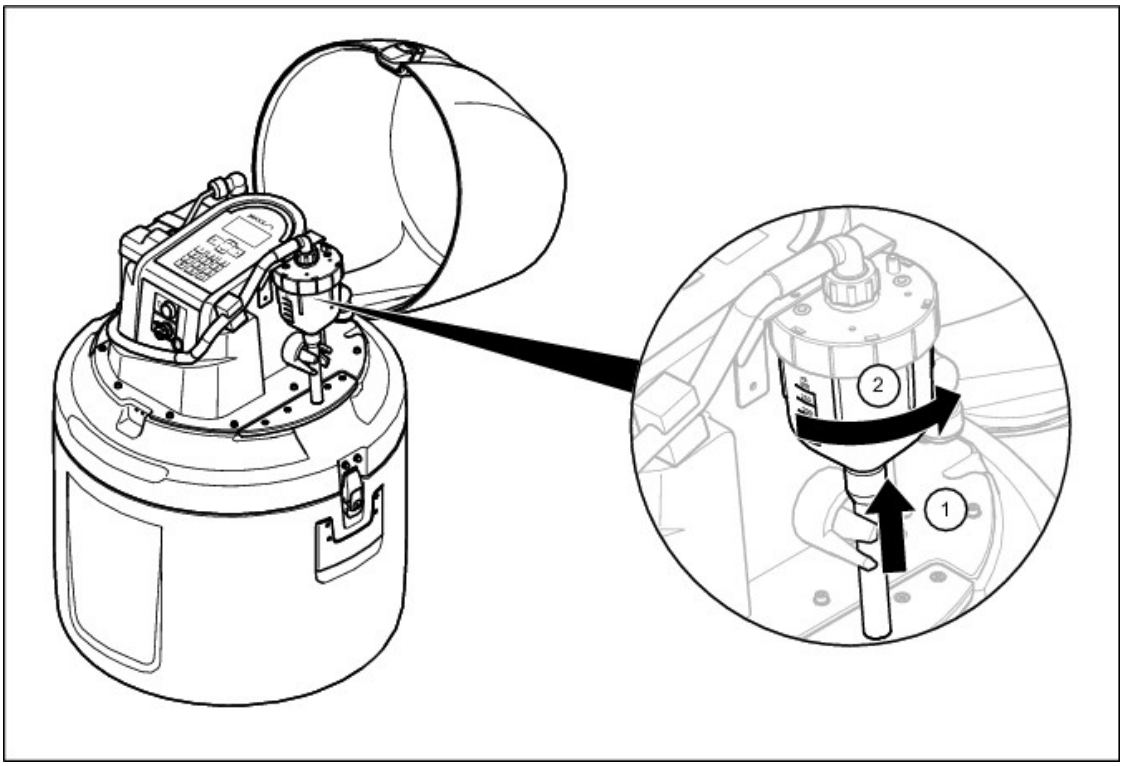


Figure 24 Assemble the plastic dosing vessel

3.3.3.2 Peristaltic Pump

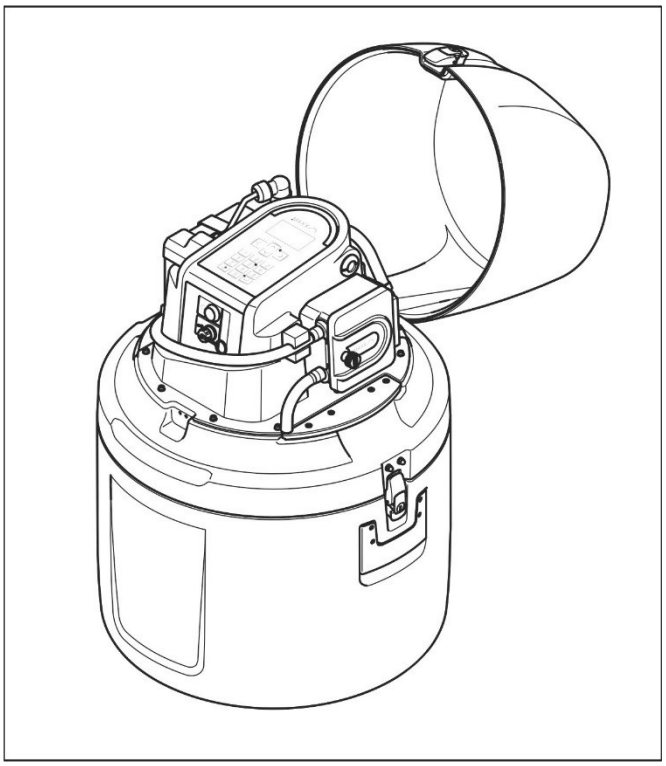


Figure 25 Unit with Peristaltic Pump

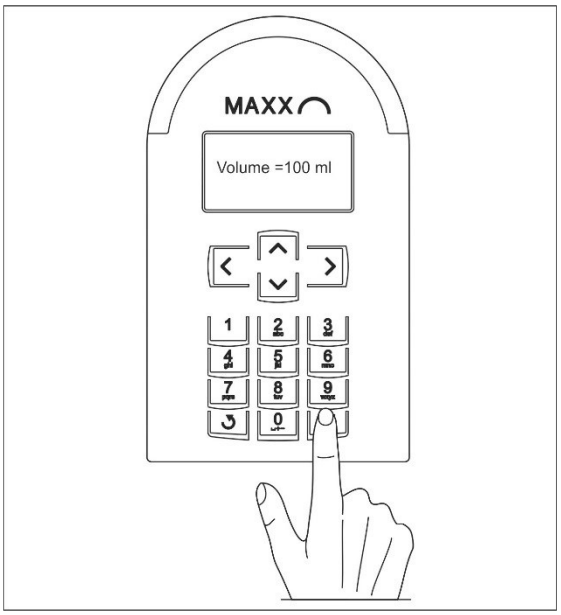


Figure 26 Set of the sample volume

With the Peristaltic Pump the sample volume is adjusted via keypad

3.3.3.3 Calibration of the Peristaltic Pump

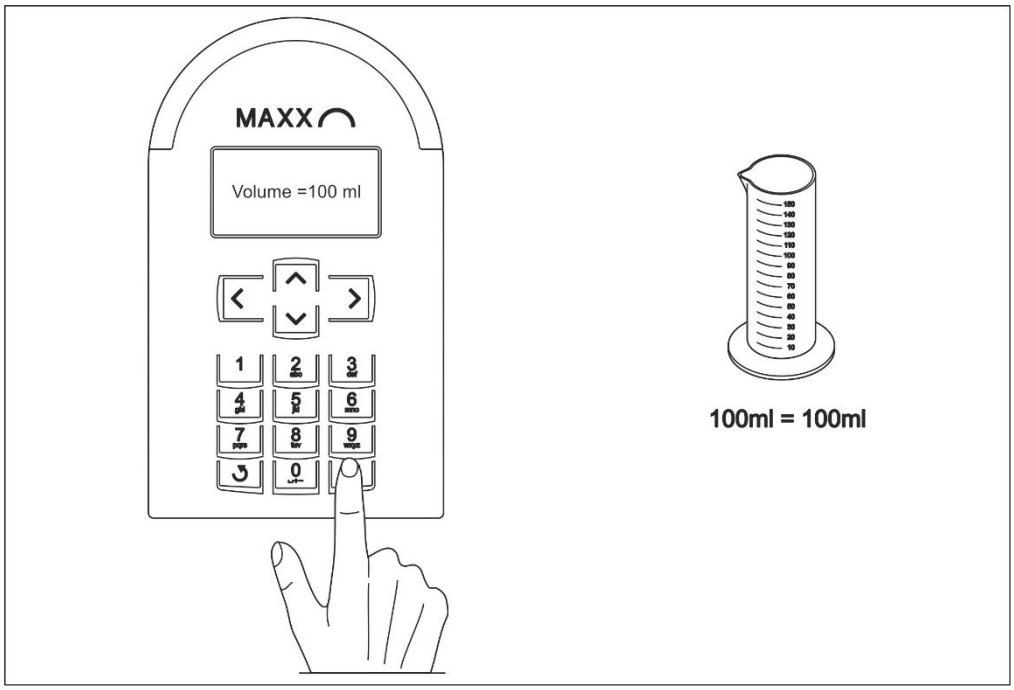


Figure 27 Calibrate the Peristaltic Pump for flow-proportional sampling (CT, VV)

Calibration Volume of PERISTALTIC PUMP:

SET UP ➡ SYSTEM SETTINGS ➡ CALIBRATION VOL

(Details in Programming manual -> **Calibration Volume**)

Note: The accuracy is only guaranteed if the system was previously calibrated for the sampling site:

Even when calibrating in the laboratory, make sure that the hose slopes down continuously towards the container. Otherwise, there is a risk of air bubbles leading to incorrect results.

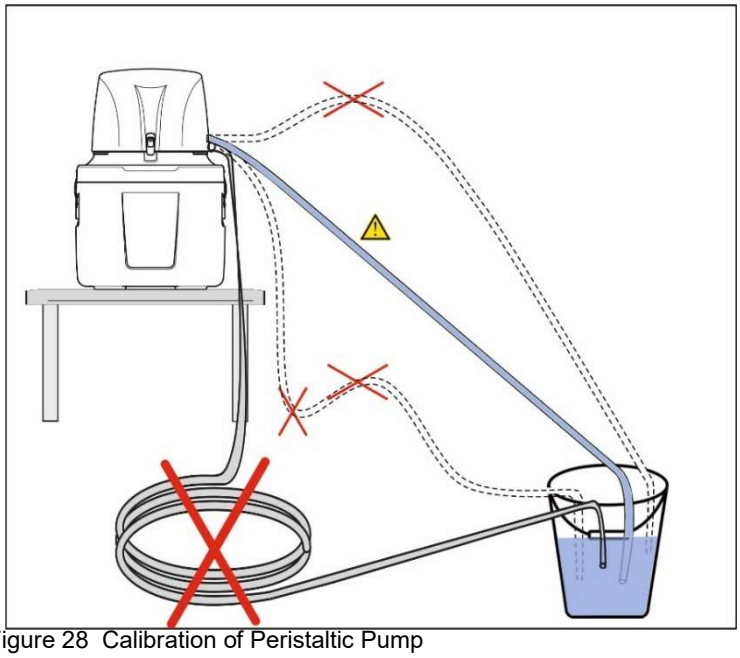
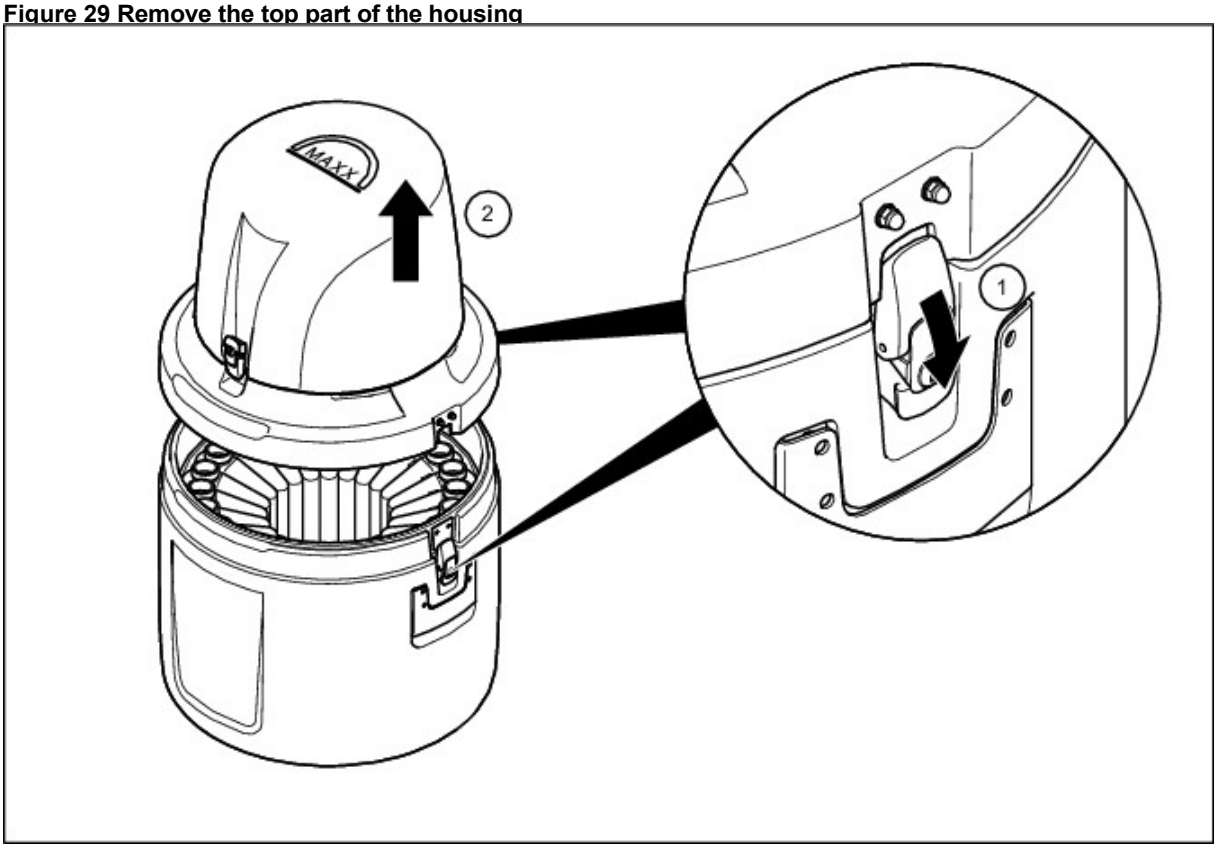
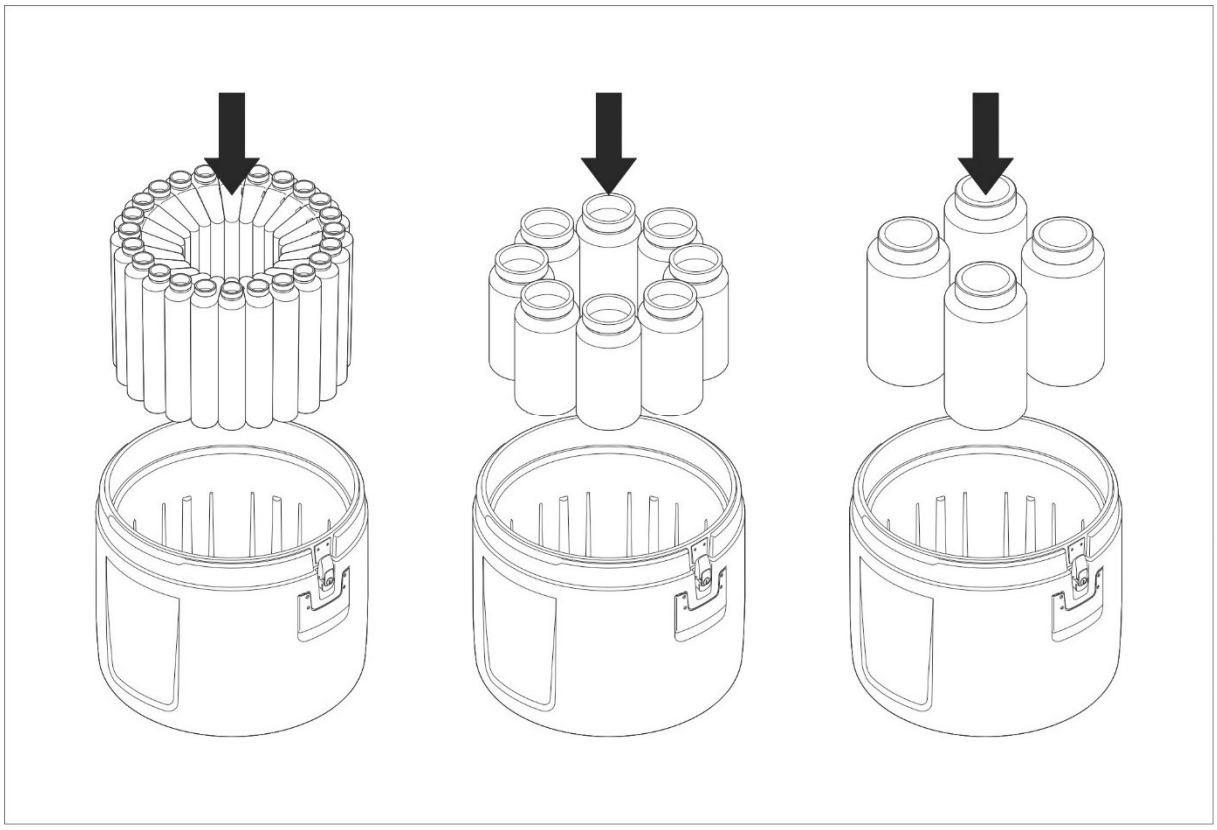


Figure 28 Calibration of Peristaltic Pump

3.3.4 Remove the top part of the housing

Figure 29 Remove the top part of the housing

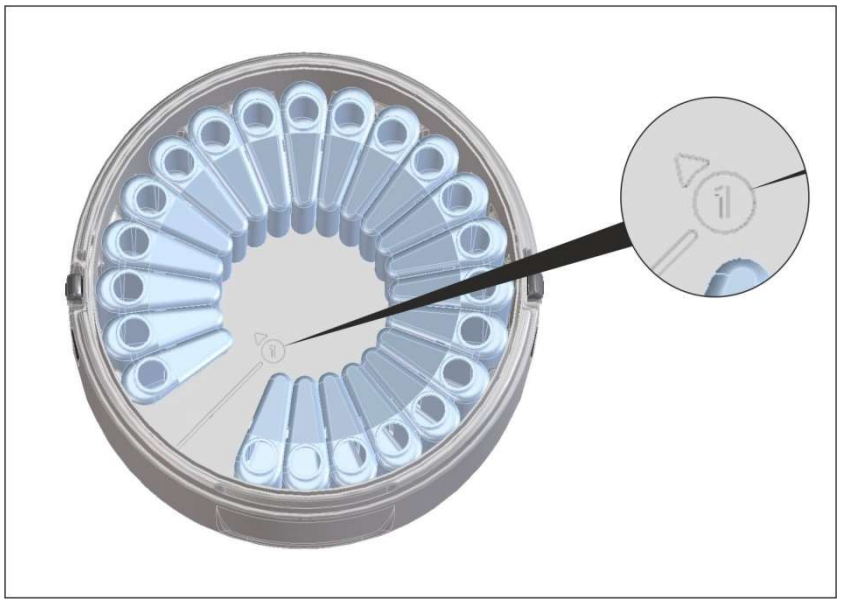




3.3.5 Prepare the sample bottles

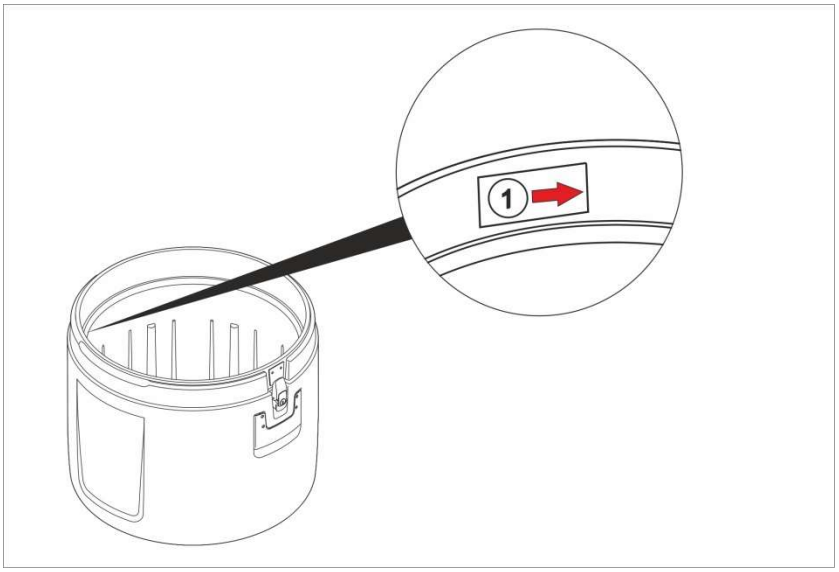
Figure 30 Place the empty bottles into the bottle compartment

3.3.5.1 Position bottle No. 1



Note:
At the bottom of the samplerhousing the position for bottle No. 1 is labeled in addition to the filling direction.

Figure 31 P*osition for bottle No. 1* (only P6 L)



Note:
At the upper edge of the housing is second marking for bottle position 1 with the filling direction.

Figure 32 Bottle position 1 at the upper edge of the housing (only P6 L)

3.3.6 Attach the top part of the housing

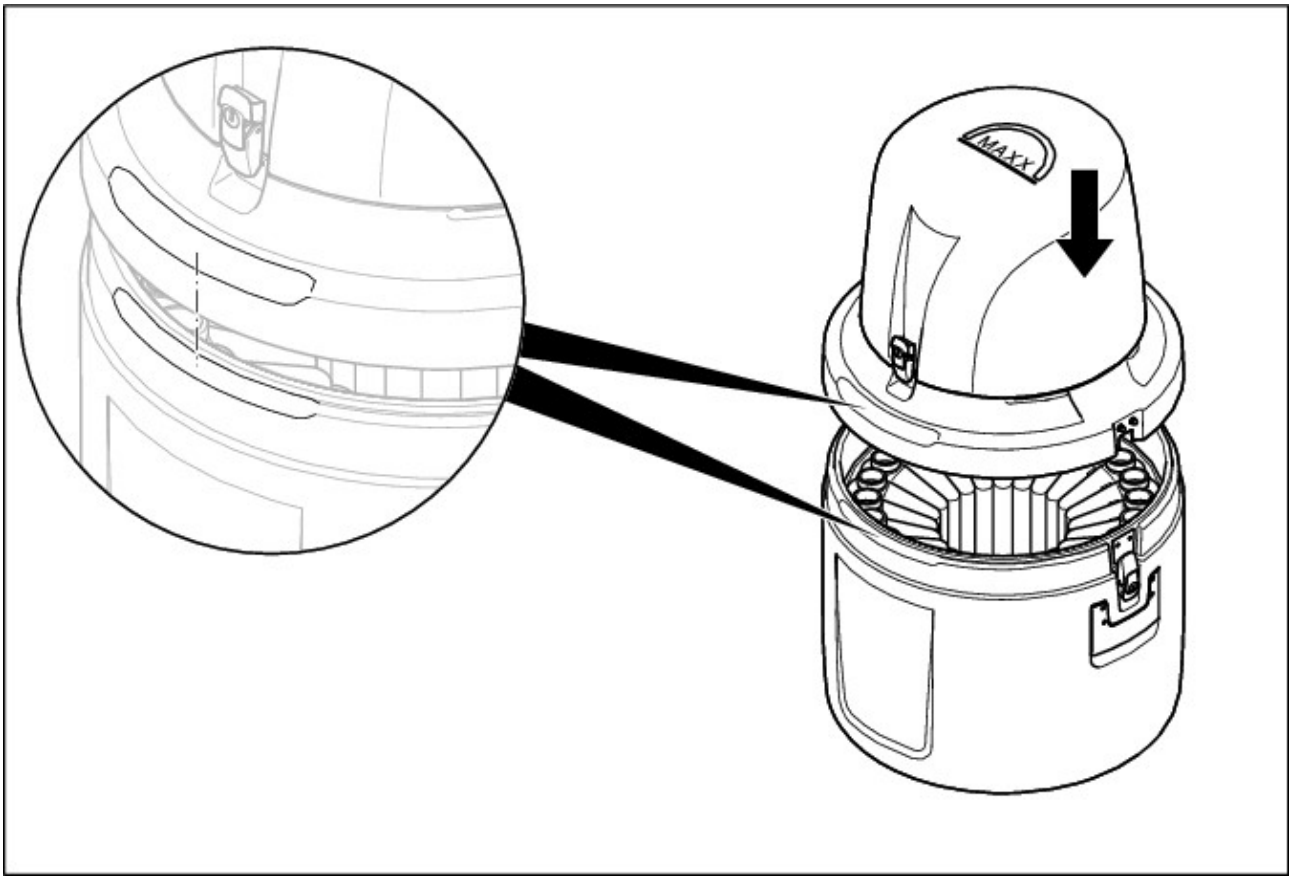


Figure 33 Attach the top part of the housing

3.3.7 Connect the equipment to the mains

Make sure that,

- The equipment has been fully prepared for commissioning,
- The data on the type plate corresponds to the data relating to the mains power supply (P6 L and P6 MINI MAXX in in connection with the charger and Y -plug 0069742),
- The correct plug has been attached or the direct wire has been implemented correctly
- The equipment can be put into operation without any risks

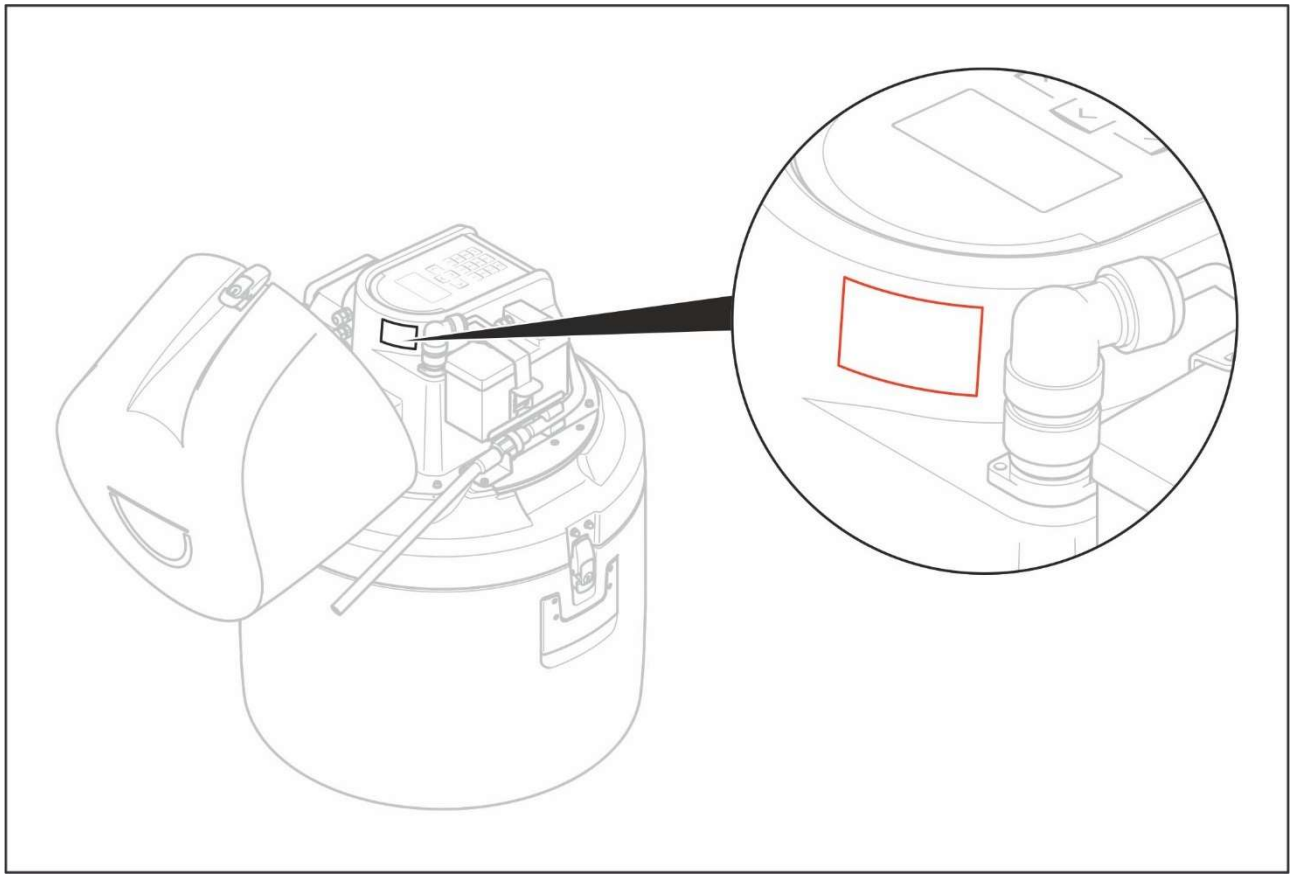


Figure 34 Rating label

Mains powered float charge option

The integral storage battery can be charged by means of the mains powered battery charger. In case of a higher energy demand, the battery charger can be permanently connected to the mains, so that the integral storage battery of the sampler is left permanently on charge (float charge).

Connect the charger with the Y-cable as shown in Figure 32

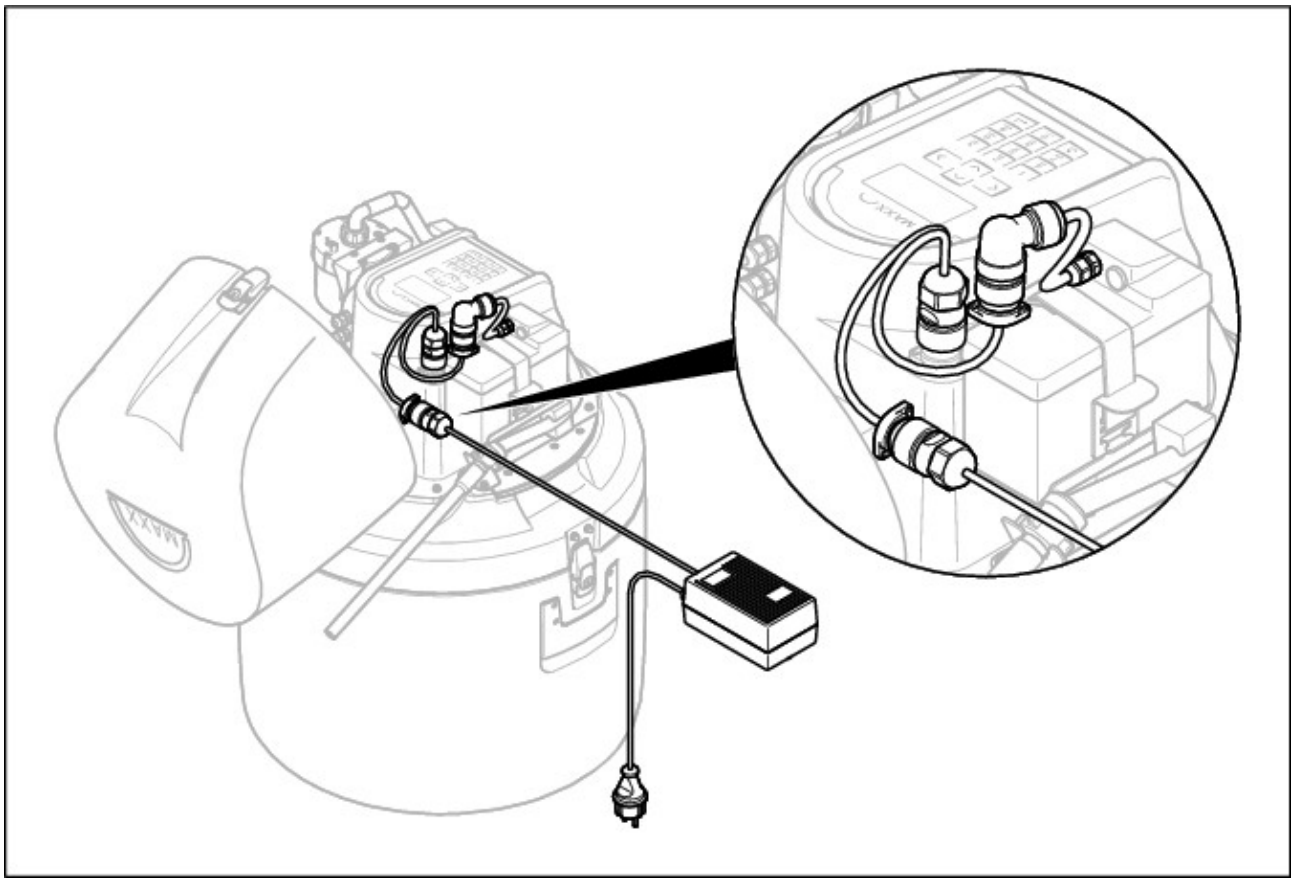


Figure 35 Connect the charger with the Y-cable

DANGER

Make sure that the power supply, cable (also refer to Figure 11+12, page 15) and equipment are suitable for use with each other..

Section 4 OPERATION

4.1 Control unit operation

All the equipment functions are software-controlled.
See the detailed description in the Programming Manual“

4.1.1 Password

Default Password to program sampler and to change settings is

6299

4.1.2 Programming

The menu structure resembles the directory structure of a computer hard drive and is divided into main menus and sub menus.

4.1.3 Keyboard layout/function

The equipment can be programmed by the operator

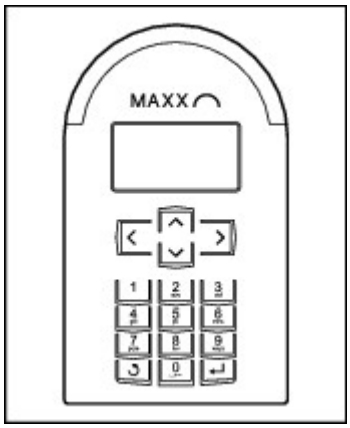
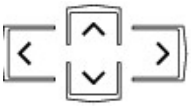


Figure 36 Control panel

The key functions are configured as follows to enable highly intuitive operation:

Table 1 Key functions

Display help text (in the case of selection fields, the cursor must be placed on the left-hand side)	Arrow- key	
Move from one menu item to the next menu selection	Arrow- key	
Select the desired menu	Enter-key	
Move within a menu	Arrow- key	
Select from within a menu	Arrow- key	
Confirm the selection (automatically marked with a ✓)	Enter-key	
Enter/change values	Arrow- key	
Confirm the entered values	Enter- key	
Return to the next superordinate menu level	Back- key	
Enter values	Numeric keypad	
Initialise (Reset) of Display - Press together	Back-key + Enter	Gemeinsam drücken
Wakeup sleep mode (press 5 sec. at least)	Back- key	Press 5 sec. at least
Restore factory settings (Display = „**load factorysettings**“) Hold Back-key until boot process is finished **NOTE:** All data will be deleted	Back- key	

Example: A setting needs to be changed.

1. Use the arrow keys to move the cursor until it is in the required position.
2. PRESS the ENTER-key

   The selection is now confirmed and the program can be started

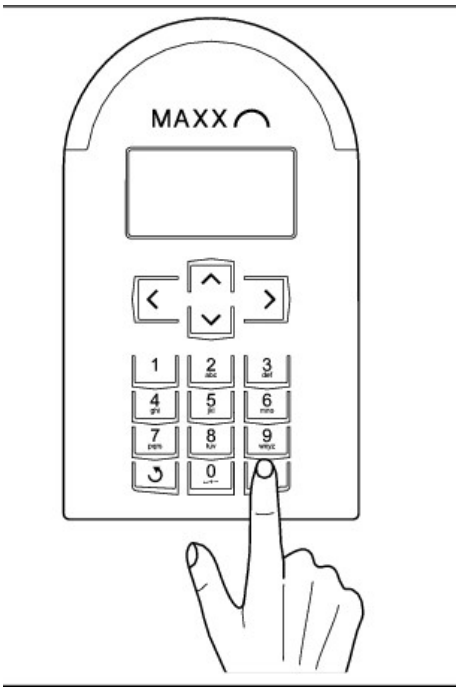


Figure 37 Start the program

Depending on the program range,

- an activity is started or
- the next menu item is automatically selected..

Note: *The general rule:*

If you press Back,
– the activity is cancelled or
– the navigation takes one step back in the menu

4.2 Normal operation

4.2.1 Replace the sample bottles

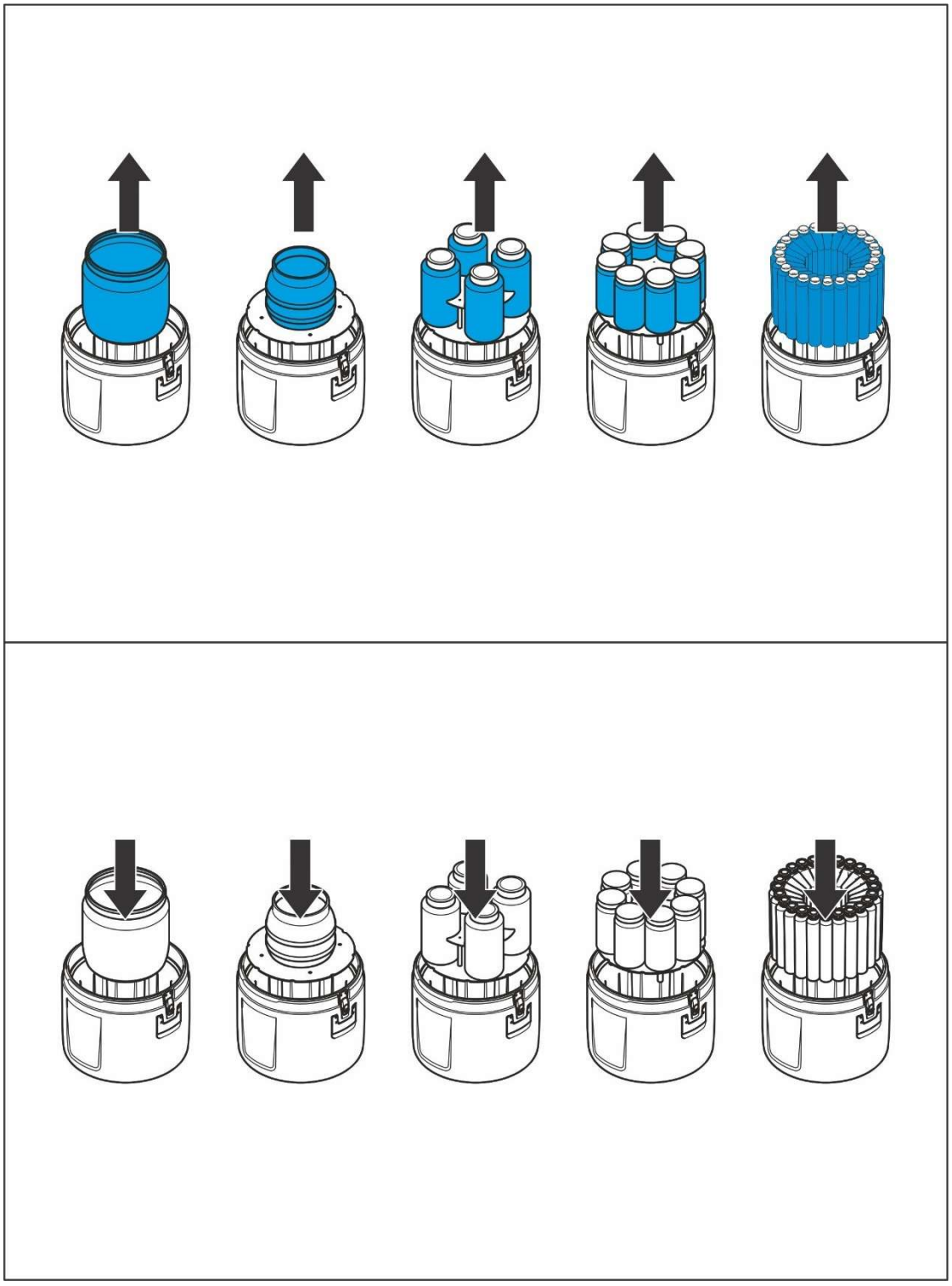


Figure 38 Replace full bottles

Section 5 MAINTENANCE AND CLEANING

DANGER

Only qualified experts should conduct the tasks described in this section.

WARNING

Please observe the following points for the use of chemicals and/or waste water:

Wear protective clothing: –

- Laboratory coat

- Protective eyewear

- Rubber gloves

5.1 Maintenance work

5.1.1 Desiccant replacement

A desiccant cartridge (40 % rel. humidity) is located inside the controller to absorb moisture and prevent corrosion . Over time the desiccant will become saturated with moisture and should be replaced. Monitor the desiccant color through the clear plastic window . The color will change from **blue to pink** when the desiccant is saturated

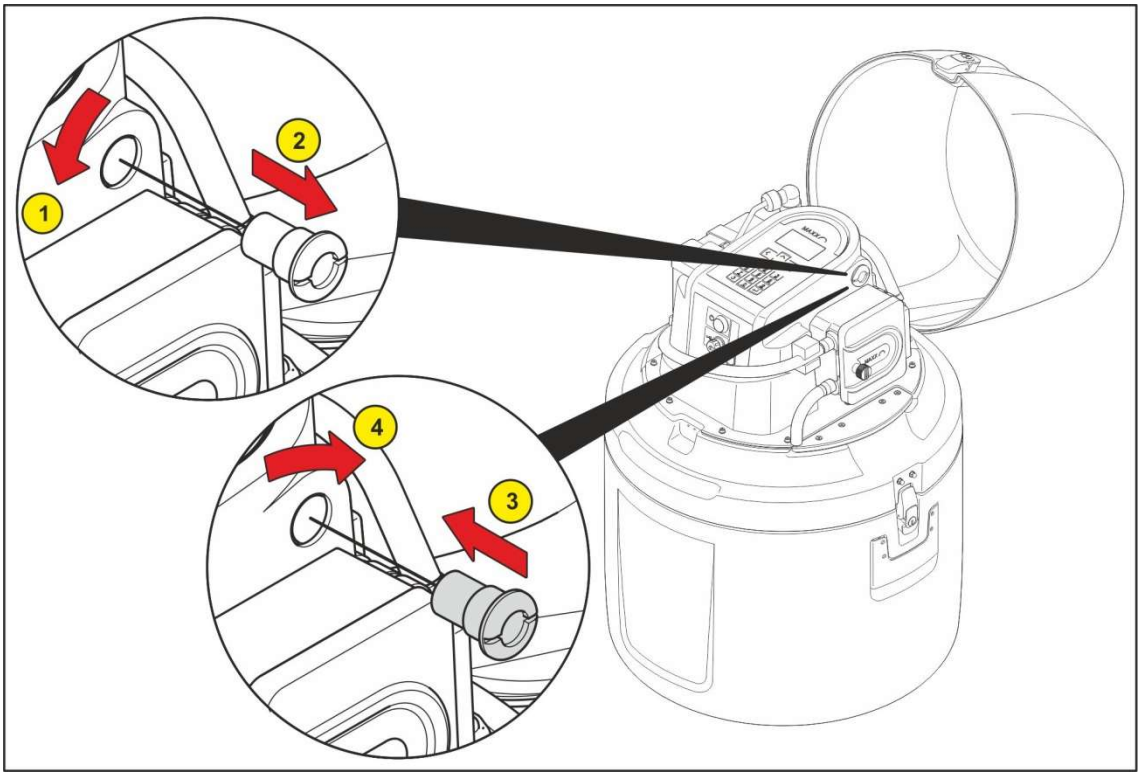


Figure 39 Desiccant replacement–Peristaltic Pump

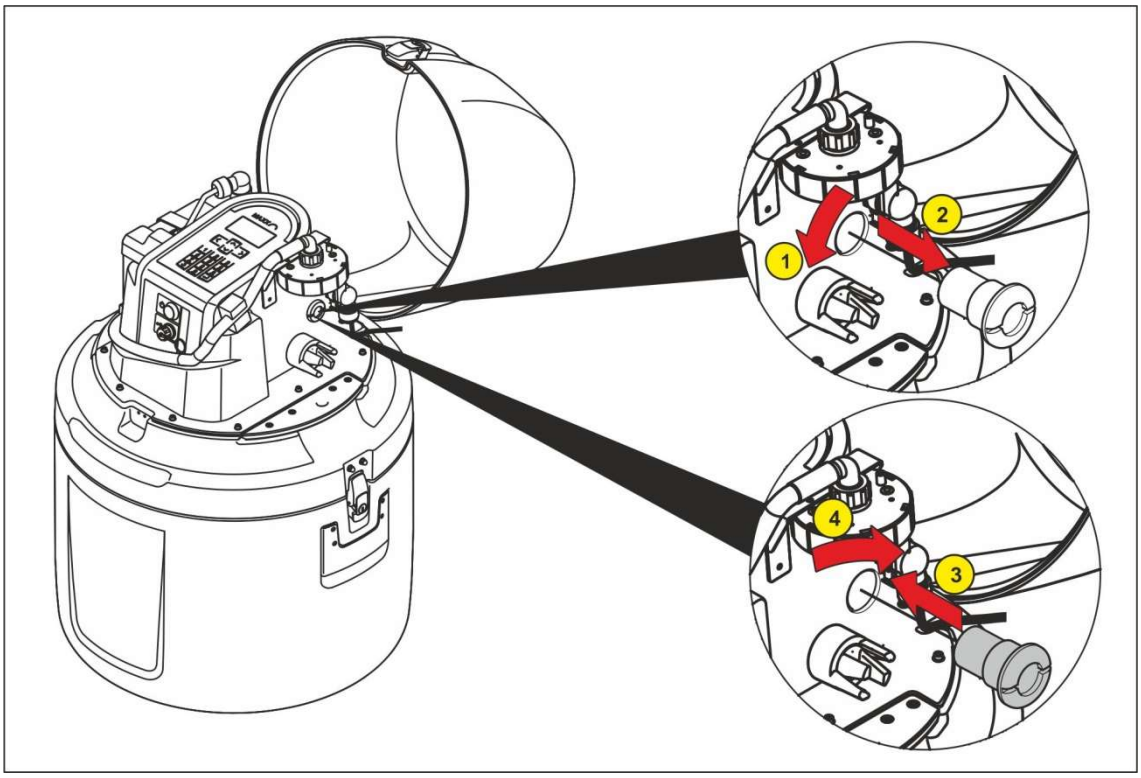


Figure 40 Desiccant replacement –Vacuumsystem

5.1.2 PUMP TUBE REPLACEMENT

Important Note: Use of tubing other than that supplied by the manufacturer may cause excessive wear on mechanical parts and/or poor pump performance!

Inspect and clean the pump tubing and rollers on a regular basis. Replace the tubing (Part.No. 0901062) when deteriorated, at regular intervals.

Note: **the hose and hose connectors must be dry when changing**

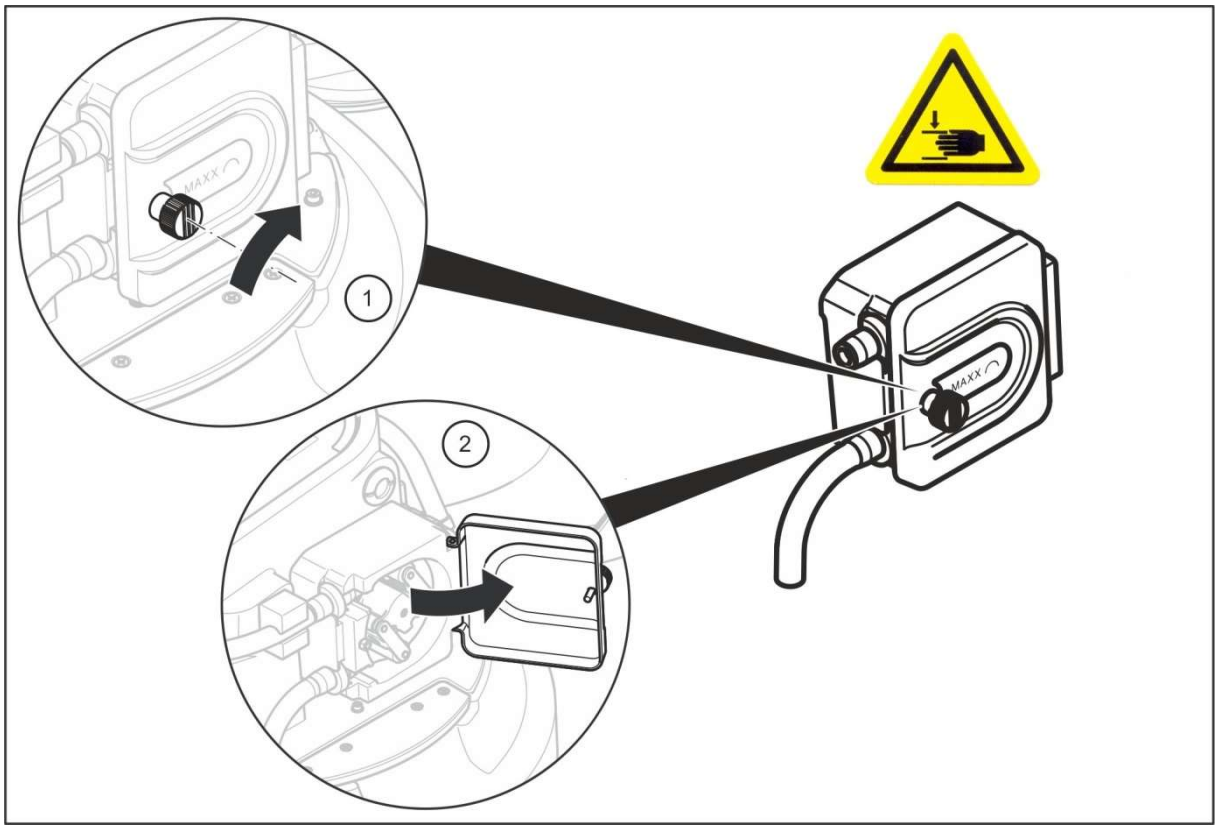


Figure 41 Pump tube replacement 1

Danger

Changing the pump hose may only be carried out with the power supply disconnected. To do this, remove the battery plug! See also page 13.

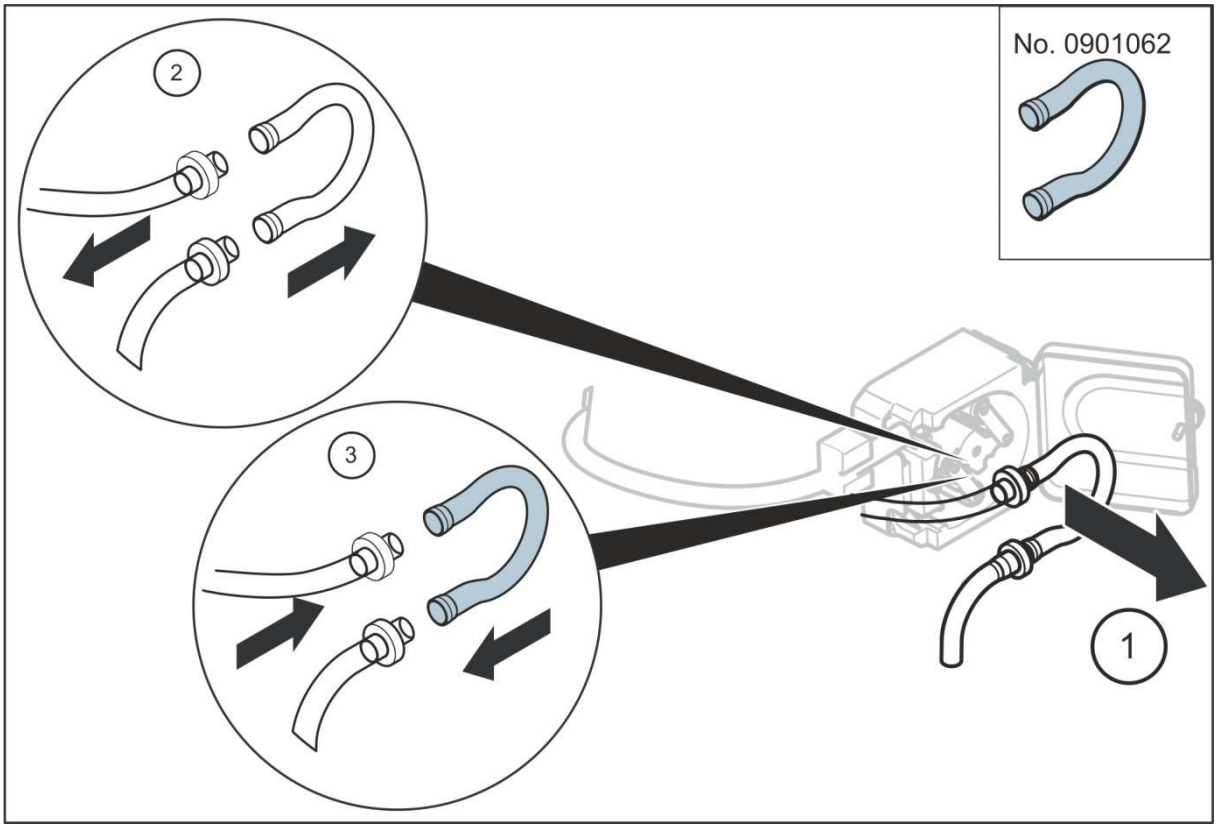


Figure 42 Pump tube replacement 2

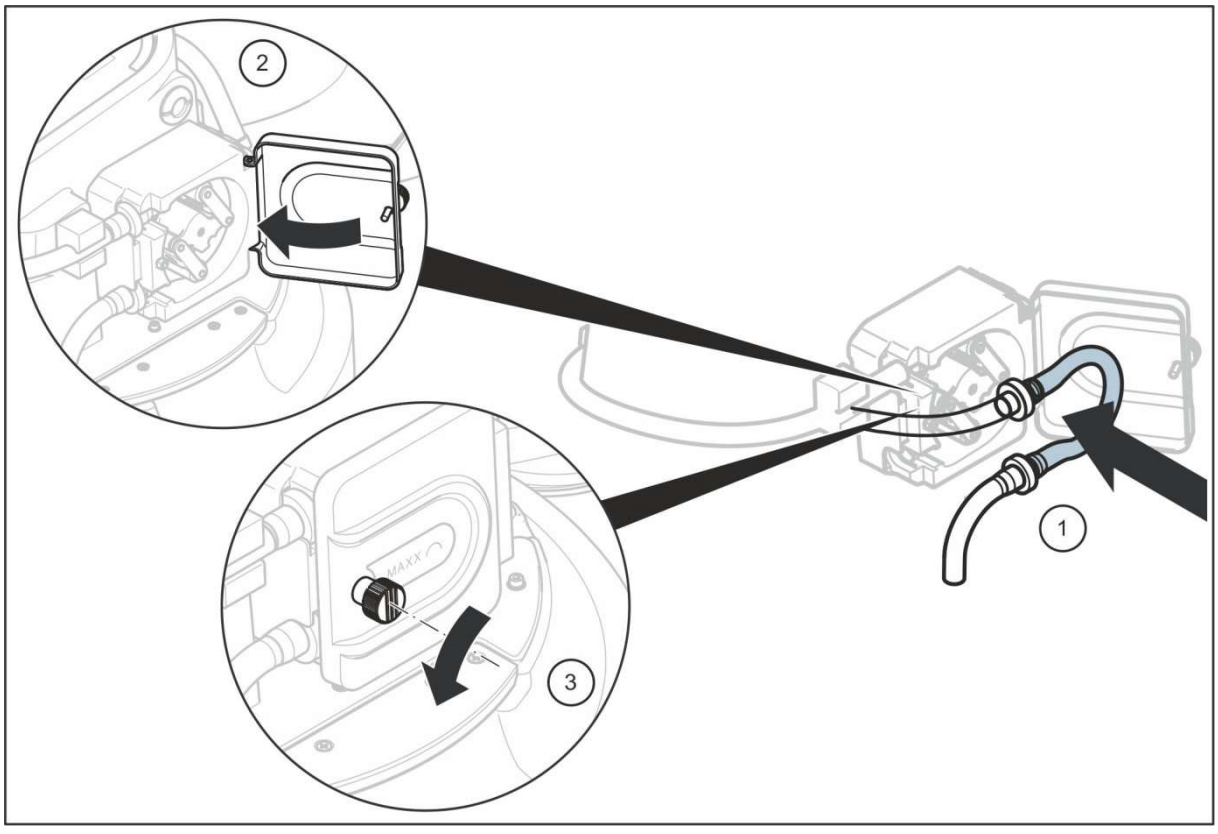


Figure 43 Pump tube replacement 3

Important Note:
The sampler measures the sampling volume with **2** capacitive Sensors. Depending to the sampling point after some time can be dirt in the silicon tube. If you get error messages (error sensor / error electrodes), you have to ***clean the tube***!

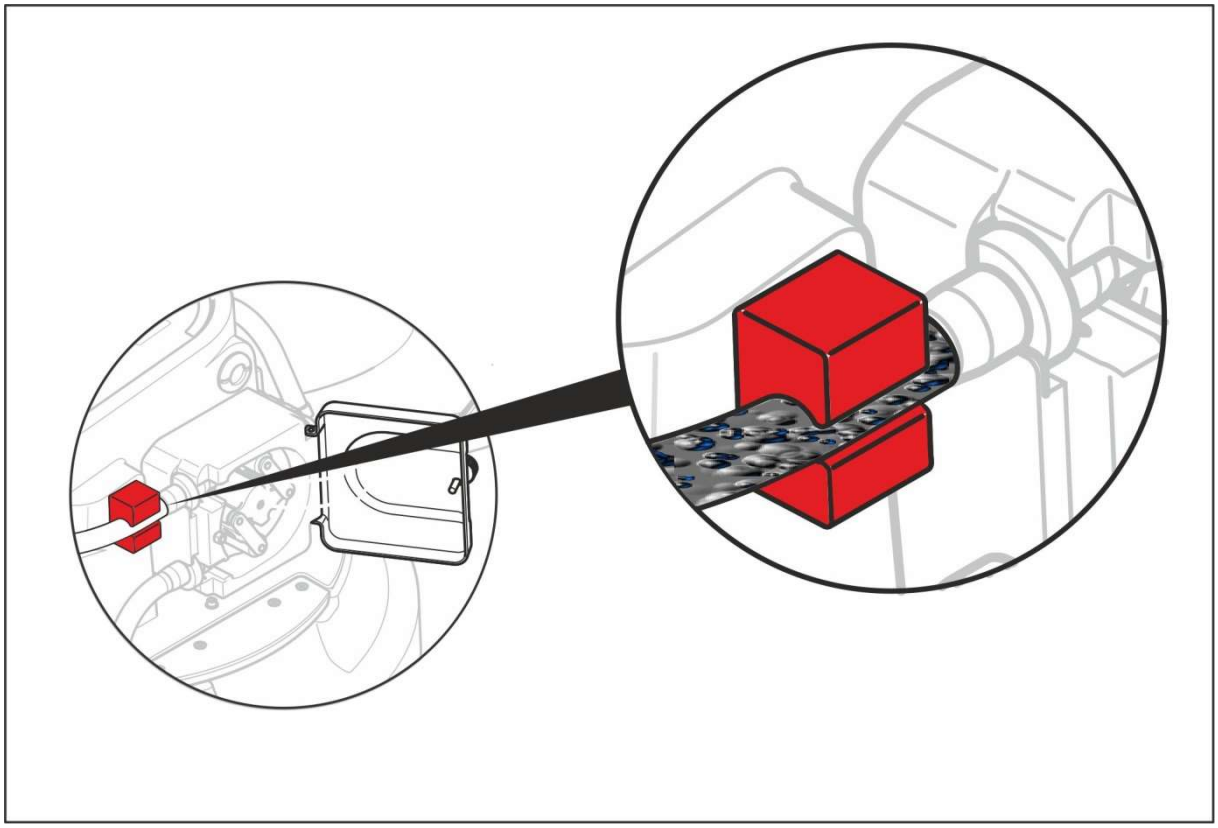


Figure 44 Peristaltic Pump – Cleaning of the tube

TIP: A very simple way to clean the tube inside is the use of a pig (sponge). Cut a piece of sponge with approx. 12x12 mm.
Go to the menu:
DIAGNOSTICS / TEST ► COMPONENT TEST ► PUMP.
You can now manually run the pump forward (suction) and backward (purging).
Moisten the sponge, hold it to a tube end and let it “suck” through the tube. It works in both directions.
Repeat this until the hose is clean again.

You can also buy pigs with different diameters ready to use e.g. Cleaning/Sponge balls like the picture shows

5.2 Cleaning

The apparatus ***must be*** cleaned regularly in accordance with the degree of contamination present. In view of the quality of samples, we recommend to clean thoroughly especially the wetted parts like dosing unit, electrodes, distributor, bottles and inlet hose. Failure to do so could result in damage or destruction to the equipment, device that are not covered by warranty.

5.2.1 Clean the housing and distribution unit

WARNING!
Manual rotation of the distribution unit can damage the drive.
Never rotate the distribution unit manually.

Clean the interior and exterior of the housing with a damp, lint-free cloth. Add commercial household cleaner to the cleaning water as required.

1. Clean the interior and exterior of the housing with a damp, lint-free cloth. Add commercial household cleaner to the cleaning water as required..
2. Remove the top part as shown in the illustrations (figure 26, page 24)
3. Clean the unit around the distributor arm as required
4. Clean or replace the tubes as required (suction hose, dosing tube and tube down to the distributor arm

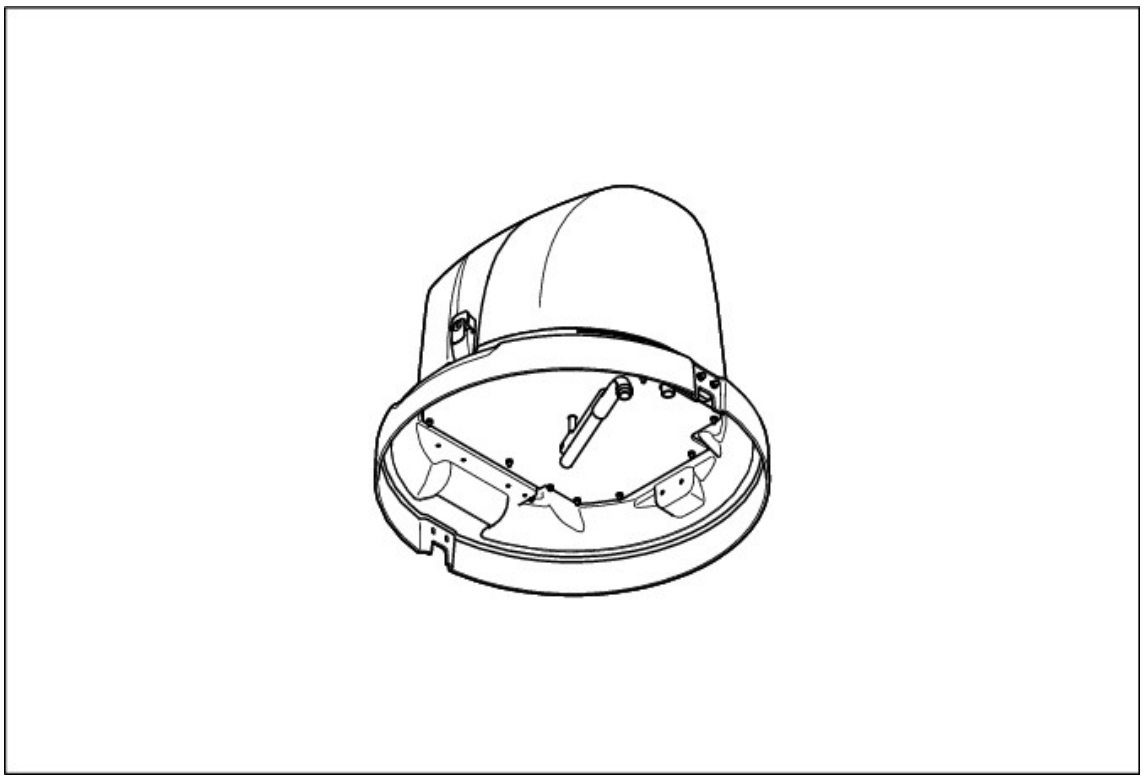


Figure 45 Distributor arm

Mounting of the distributor arm:
Put the distributor arm on the axle. The correct position is defined by the locating bolt, which has to be inserted into the boring of the distributor arm. Close the screw just manually without any tool

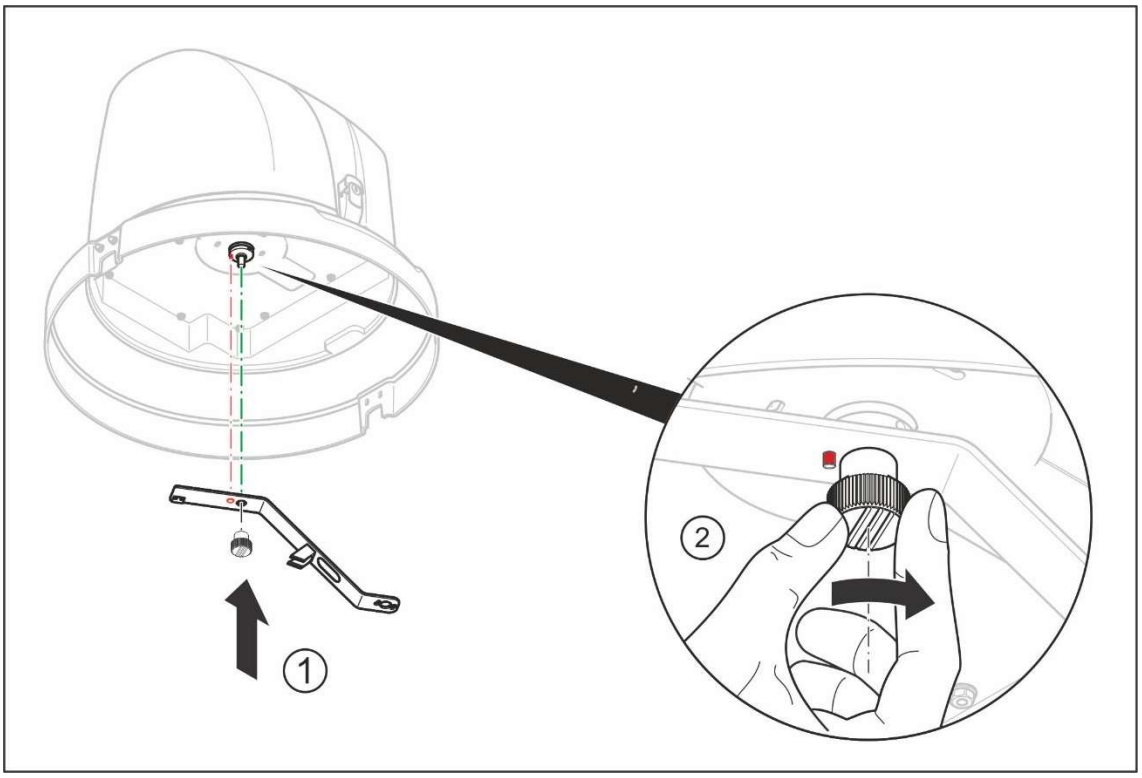


Figure 46 Mounting of distributor arm

5.2.2 Clean the dosing vessel

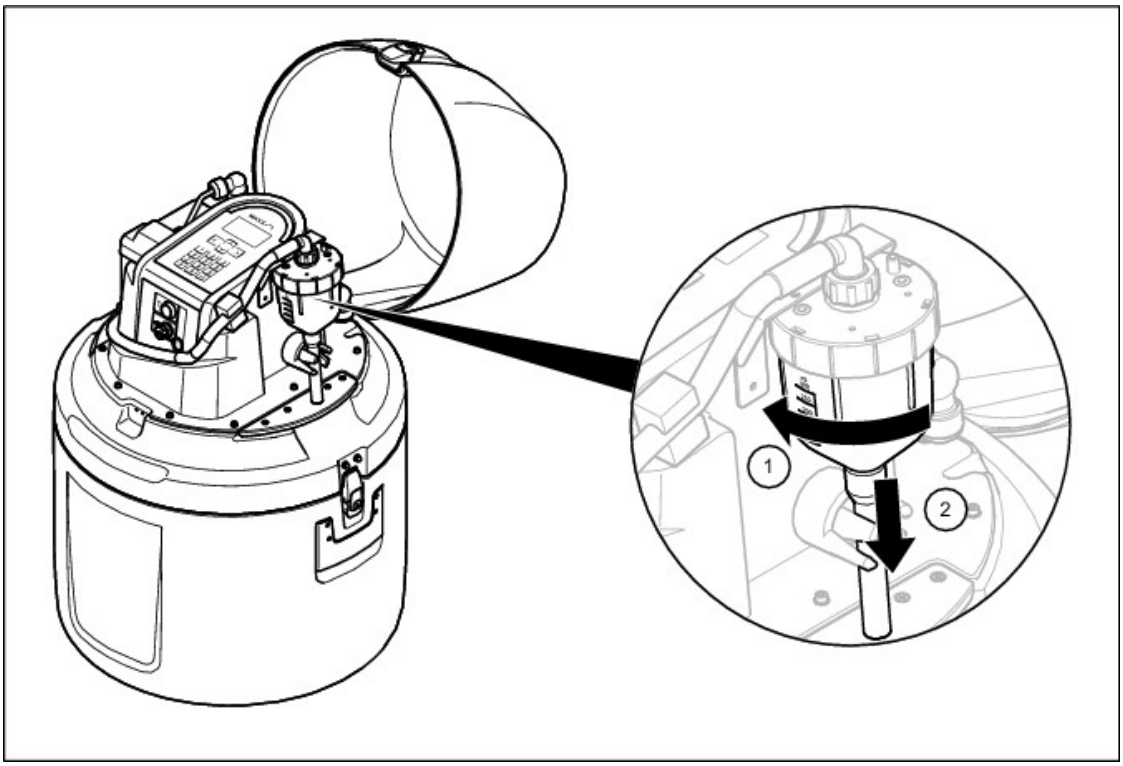


Figure 47 Release the dosing vessel

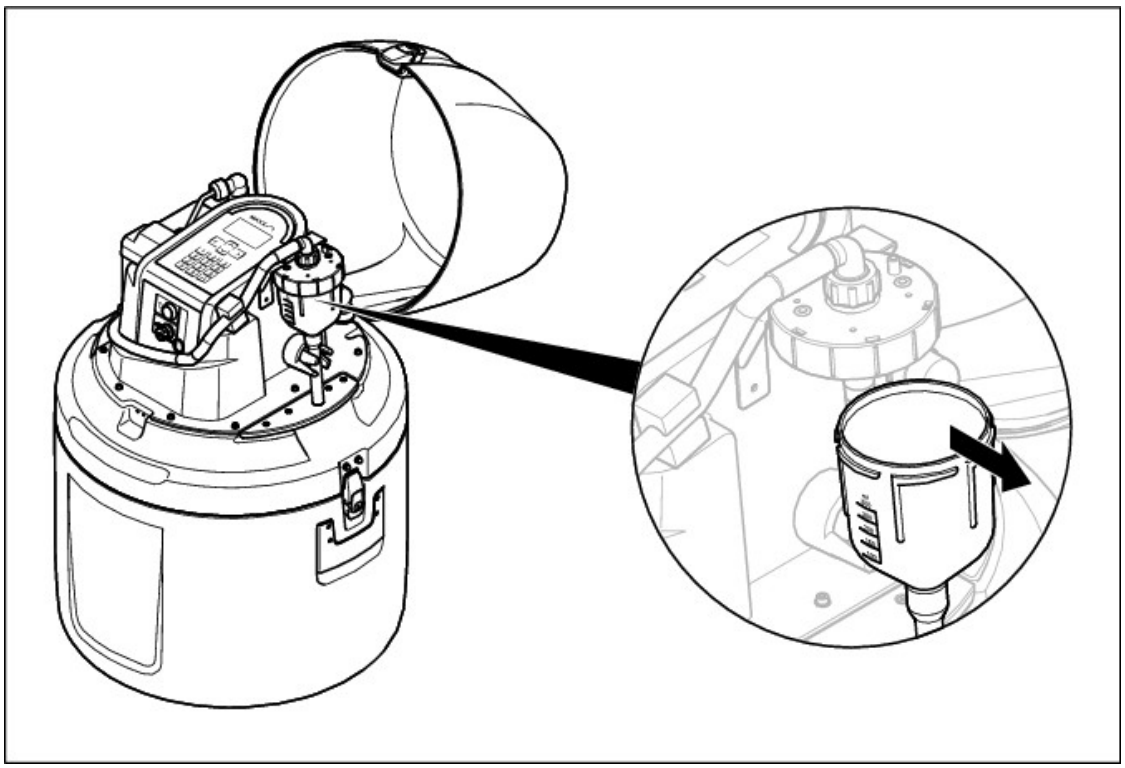


Figure 48 Remove the dosing vessel

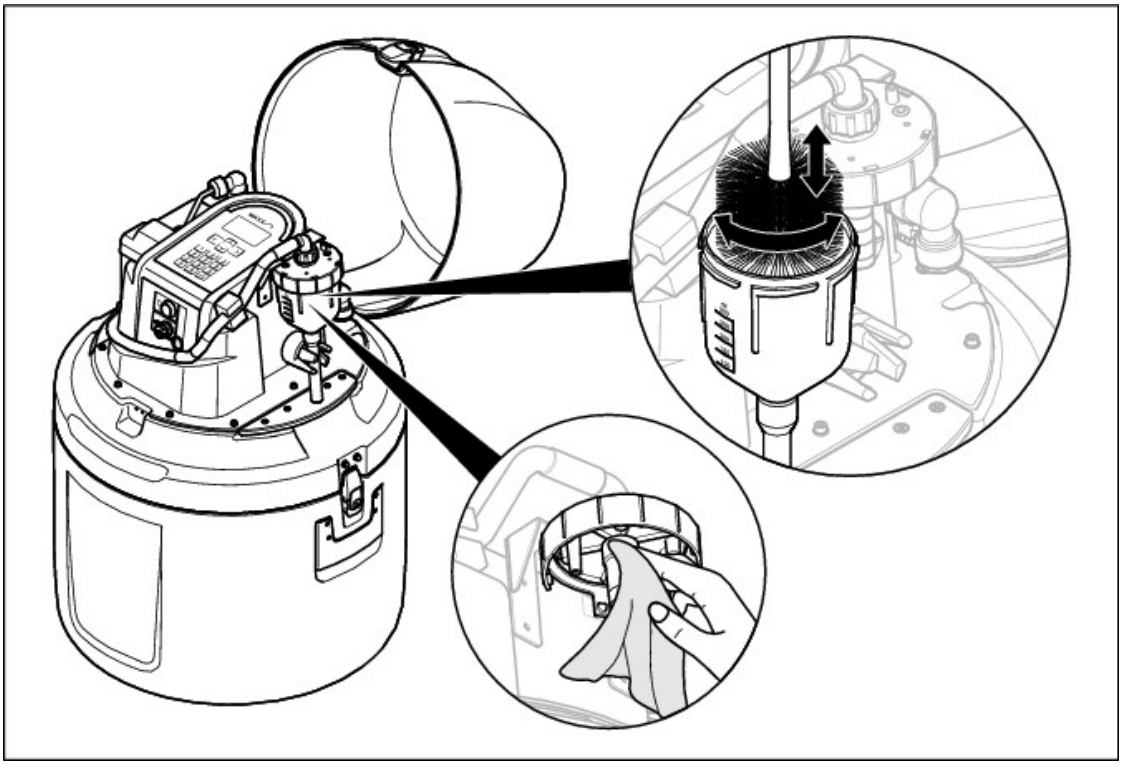


Figure 49 Clean the dosing vessel

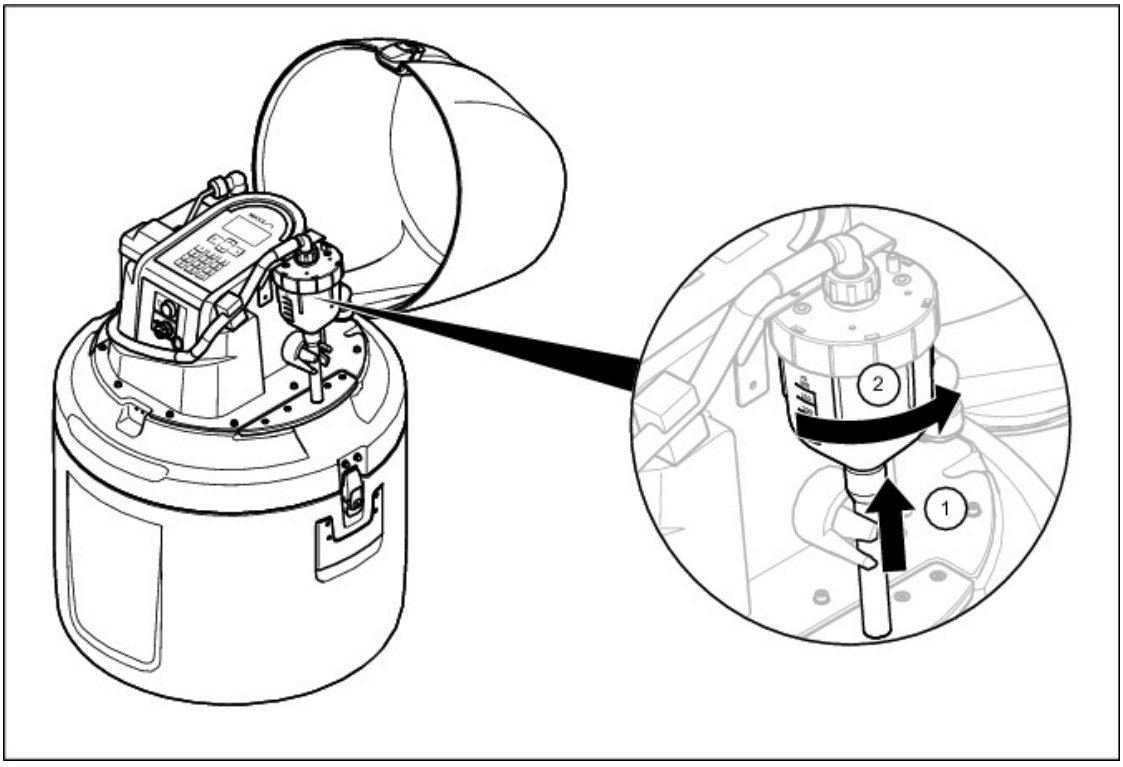


Figure 50 Insert the dosing vessel

5.3 Troubleshooting

If the equipment does not work as required, check the fuse and replace if necessary

5.3.1 Change the fuse

The device has two fuses.
A main fuse with 8A and a limited second circuit with 2A

To test or replace a fuse, open the fuse holders as shown in Figure 48 and replace the defective fuse (**8 AT** or **2 AT**)

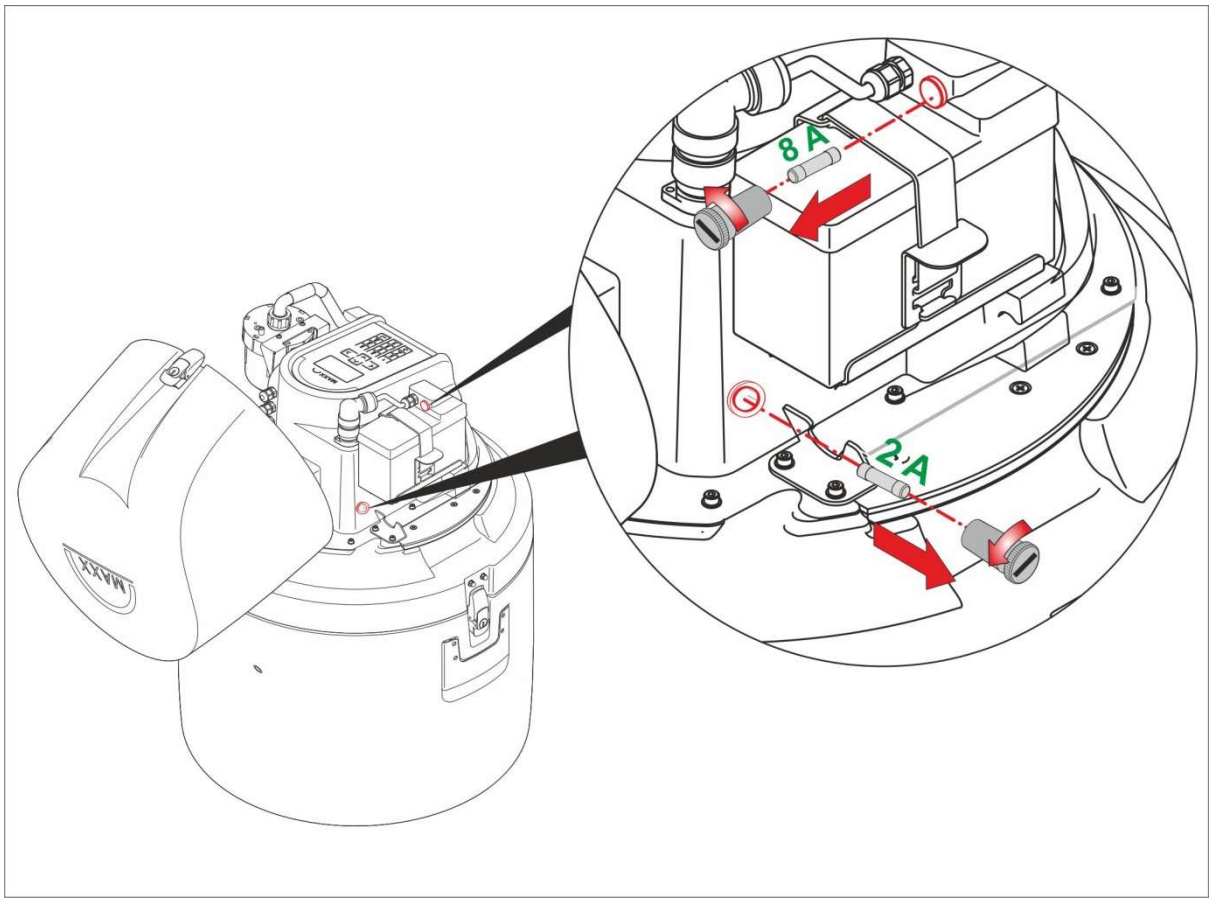


Figure 51 Position of the fuses in the portable sampler P6

If the error is not rectified, please contact the customer service of the manufacturer.

5.4 Instrument decommissioning and storage

1. Close all active programs.
2. Switch the equipment off.
3. Remove all liquids and, if necessary, solid matter from the infeed and outfeed lines and bottle compartments and clean as required.

To purge the pump-tube and/or suction hose go to
DIAGNOSTICS/TEST ⇨ **COMPONENT TEST** ⇨ **PUMP**

Press button left ◀ to turn the pump backwards for purging.

Press the button down ▼ to stop the pump.

Section 6 REPLACEMENT PARTS AND ACCESSORIES

6.1 Spare parts - P6

Description	Art.Nr.
Plastic	
Replacement bottle, PE, 1 L Segment	0060584
Replacement Cap for 1 L Segment bottle	0060590
Replacement bottle, PE, 2 L	0060636
Replacement bottle, PE, 4 L	0060634
Replacement bottle, PE, 10 L	0060045
26,5 L PE-container with lid and handle (only for P6 L)	0060633
Glass	
Replacement bottle, glass, 350 ml	0030052
Replacement cap for 0,35 L, PE white	0060628
Replacement bottle, glass, 1 L	0030054
Replacement cap for 1 L Glass	0060640
Replacement bottle, glass, 2 L	0030013
Replacement cap for 2 L Glass bottle , PE white	0060161
Replacement bottle, glass, 5 L	0030049

6.1.1 Spare parts P6 Peristaltic Pump

Description	Art.Nr.
Peristaltic Pump Tube	0901062
Tube between the Sensors	0901063
Tube to distributor arm	0901064
Tube connector V2A (2 pc. are necessary)	0050695-VA
tube connector PTFE (2 pc. are necessary)	0050695-PTFE

6.1.1 Spare parts P6 Vacuum Dosingsystem

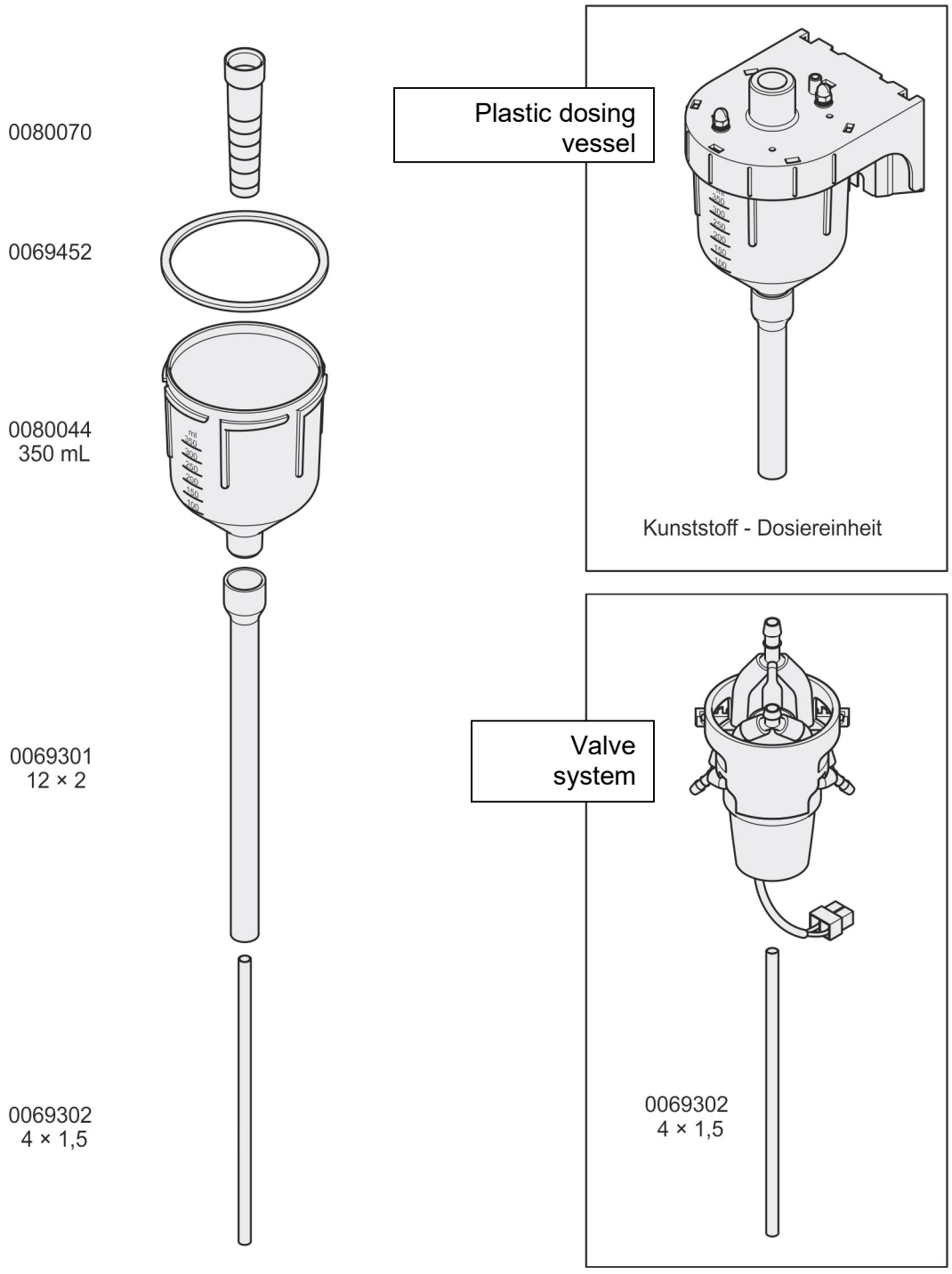


Figure 52 Vacuum Plastic dosing vessel

P6 Vacuum

Description	Art.Nr.
Tube between the Sensors	0901060
Tube to distributor arm	0901061
Volume control tube for dosing unit with plastic metering vessel	0080070
Sealing ring dosing unit	0069452
Dosing vessle in plastic	0080044
Silicone tube 12x2 (at dosing vessel)	0069301PT
Silicone hose 4x1.5 for valve system (1 meter)	0069302

6.2 Accessories

Description	Art.Nr.
Suspension Harness (P6 MINI MAXX only)	0901072
Suspension Harness (P6 MAXX P6 only)	0901073
Suspension bar for use in sewers	0900045
Y cable, power supply	0069810
USB data cable - USB2 to USB Mini -	0069793
Battery Charger 2 A / IP 65	0010397
Power Supply 110 – 240 V AC / 7 A	0010399
Replacement battery set 7,2 Ah with connection cable	0901055
Signal cable 10 m	0069644
Suction hose 5m ID=10 ready for connection 5 m (without sinker weight)	0900812
Strainer basket 2x2mm (10 mm Ø)	0901025
Strainer basket 8mm holes for hose Ø 10 mm	0030051
Strainer-multihole - sinker weight SS304 (with 12 holes)	0050855
sinker weight, length 180mm, for Ø 10mm	0050598
Replacement cold pack	0060251
Transportation trolley	0900802

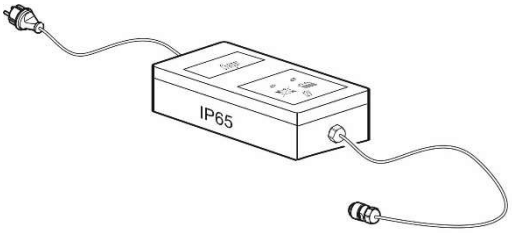


Figure 53 Charger IP65

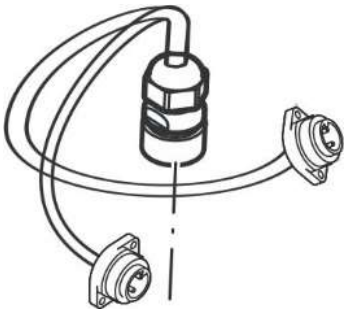


Figure 54 Y-cable

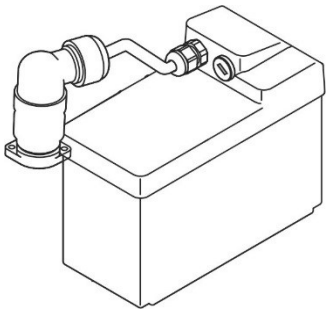


Figure 55 Replacement battery pack

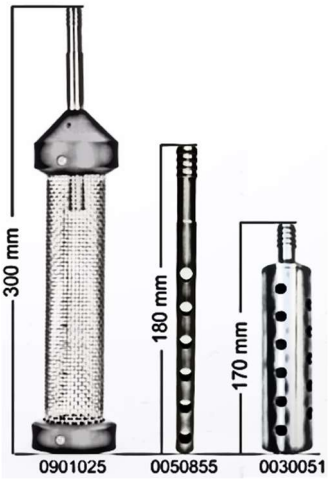


Figure 56 Strainers

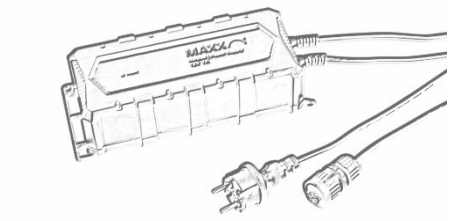
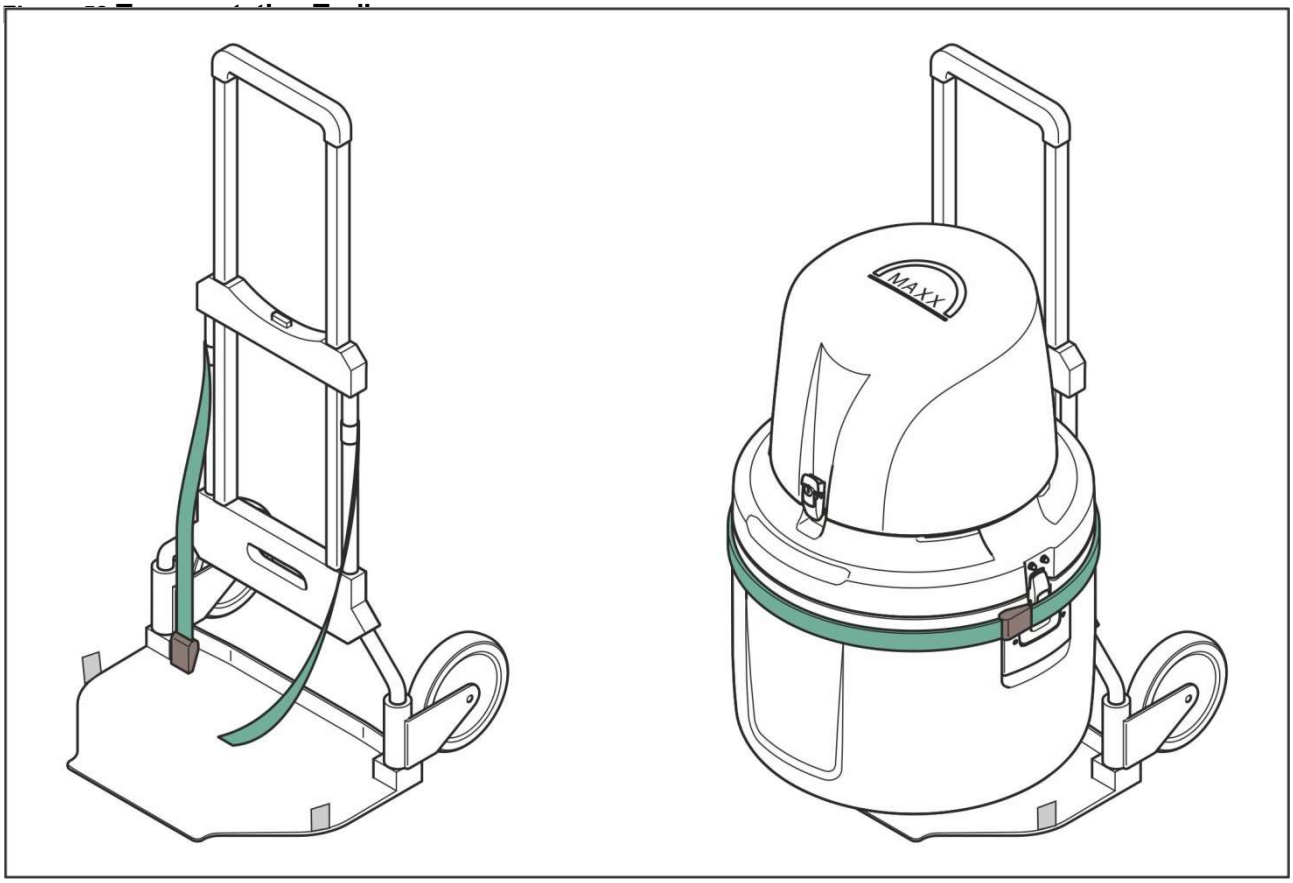


Figure 57 Power Supply IP65



1. **suspension bar for use in sewers**

2. **suspension harness**

Figure 59 Transportation Trolley

Section 7 WARRANTY AND LIABILITY

The manufacturer warrants that the product supplied is free of material and manufacturing defects and undertakes the obligation to repair or replace any defective parts at zero cost.

The warranty period is **12 months** from delivery resp. invoice date. Consumables and damage caused by improper handling, poor installation or incorrect use are excluded from this clause

With the exclusion of the further claims, the supplier is liable for defects including the lack of assured properties as follows: all those parts that, within the warranty period calculated from the day of the transfer of risk, can be demonstrated to have become unusable or that can only be used with significant limitations due to a situation present prior to the transfer of risk, in particular due to incorrect design, poor materials or inadequate finish will be improved or replaced, at the supplier's discretion. The identification of such defects must be notified to the supplier in writing without delay, however at the latest 7 days after the identification of the fault. If the customer fails to notify the supplier, the product is considered approved despite the defect. Further liability for any direct or indirect damages is not accepted.

If instrument-specific maintenance and servicing work defined by the supplier is to be performed within the warranty period by the customer (maintenance) or by the supplier (servicing) and these requirements are not met, claims for damages due to the failure to comply with the requirements are rendered void.

Any further claims, in particular claims for consequential damages cannot be made.

Consumables and damage caused by improper handling, poor installation or incorrect use are excluded from this clause.

List of Figures

MAXX Mess- u. Probenahmetechnik GmbH
Hechinger Str. 41, D-72414 Rangendingen
Tel. +49(0)7471- 98481 0
www.maxx-gmbh.com
info@maxx-gmbh