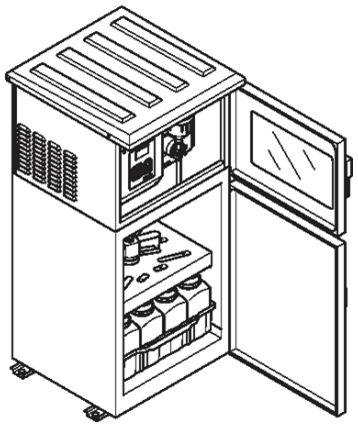
xylem
Let's Solve Water

**OPERATING MANUAL**
ba77134e02 09/2022



# PB-S

STATIONARY SAMPLER

WTW
a xylem brand

**Note:**

Access code for program changes or changes of system settings

| | |
|---|---|
| Password: | 6299 |
| Your Password: | |

# Table of Contents


**1 Technical data ..... 5**
**2 Safety information ..... 7**
2.1 Hazard information in this manual ..... 7
2.2 Warning labels ..... 8
**3 General information ..... 9**
3.1 Areas of application ..... 9
3.2 Functional description ..... 9
3.3 Scope of delivery ..... 9
**4 Installation ..... 10**
4.1 Mechanical installation ..... 11
4.1.1 Required tools ..... 11
4.1.2 Select place of installation ..... 12
4.1.3 Unpacking ..... 13
4.1.4 Setup ..... 13
4.2 Electrical connections ..... 14
4.2.1 Prepare electrical installation ..... 15
4.2.2 Wiring diagram ..... 16
4.2.3 Complete the electrical installation ..... 16
**5 Commissioning of the device ..... 17**
5.1 Hose connection ..... 17
5.2 Set the individual sample volume ..... 20
5.2.1 Plastic dosing vessel ..... 20
5.2.2 Glas dosing vessel ..... 22
5.2.3 Dosing vessel for flow-proportional sampling ..... 22
5.3 Preparing sample containers ..... 23
5.4 Connect the equipment to the mains ..... 24
**6 Operation ..... 25**
6.1 Control unit operation ..... 25
6.1.1 Programming ..... 25
6.1.2 Keyboard layout/function ..... 25
6.2 Replace the sample bottles ..... 27
**7 Maintenance and cleaning ..... 29**
7.1 Maintenance work ..... 29
7.2 Cleaning ..... 29
7.2.1 Clean the housing and distributor ..... 29
7.2.2 Cleaning the dosing vessel ..... 31
7.2.3 Cleaning measuring tube (flow-proportional dosing-system) ..... 33
7.3 Troubleshooting ..... 35
7.3.1 Open the housing to change the fuse ..... 35
7.3.2 Change the fuse ..... 35
7.3.3 Reassemble the housing ..... 35
7.4 Instrument decomissioning and storage ..... 35

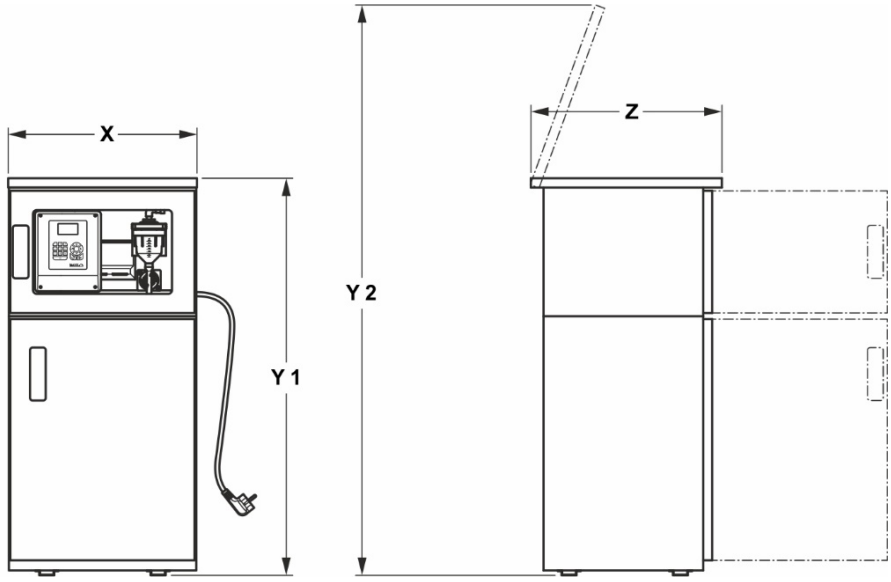
**8 Accesories ..... 36**
**9 Warranty and liability ..... 37**

# 1 Technical data

| | |
|---|---|
| Sampling method | Vacuum-System |
| Sample fractioning | Composite container (PE): 1 x 52.5 pt. (25 l)<br>Bottles (PE): 12 x 6.1 pt. (2.9 l), 24 x 2.1 pt. (1 l)* |
| Dosing | 0.042 … 0.735 p. (20 … 350 ml) |
| Sampling modes | Time-, amount-, flow-(optional), event-dependent or manual |
| Volume accuracy | < 2,5 % oder ± 0.0063 pt. (3 ml) |
| Sampling temperature | +32 … 104 °F (0 … 40 °C) |
| Ambient temperature | -4 … +109 °F (-20 … 43 °C) |
| Installation | indoor and outdoor |
| Altitude | up to 2000m |
| Relative humidity | 80% |
| Degree of pollution | 2 |
| Thermostatic control | Self-contained, controlled cooling / heating with 4 settings, no-frost. independent of the programmable controller, Temperature in sample compartment: 39.2 °F (4 °C), adjustable from 32 … 49.8 °F (0,0-9,9°C) |
| Suction height | Max. 26,25 ft. (8 m) at 1013hPa |
| Suction tube | PVC, L = 24 ft. (7.5 m), ID = 0.47 in. (12 mm), fabric reinforced** |
| Signal inputs | 2 x 0(4) … 20 mA<br>8 x digital (amount, event, freely programmable) |
| Signal outputs | 8 x digital, 1x of them freely programmable |
| Programming | 12 programs (freely programmable) |
| Program start | Immediately, at a certain time, by an external signal |
| Program stop | End of sampling program, at a certain time, after one program run, continuous operation or x-runs |
| Pause mode | Interruption of program run at any time |
| Languages | Multi-language, selectable |
| Status messages | 1 x collective malfunction message, expandable with 8 (freely programmable) |
| Data logger | 3000 entries, nonvolatile data memory,<br>storage of sampling and malfunction data (sampling extraction, bottle changes, messages, messages, external signals) |
| Interfaces | Mini USB, RS232 |

*) further configurations on request
**) expandable per meter, max. lenght 98 ft (30 m)

| | |
|---|---|
| Housing | Double-walled stainless steel (material 1.4301/ SS304) / PS / PC (GF10) with 40 mm insulation. Housing separated in sample compartment and control compartment. Protective top made of Styrosun |
| Protection | IP65 (for control unit) |
| Wetted materials | PC, PVC, Silicone, PS, PE, EPDM |
| Dimensions | 52.2 x 23.8 x 25.4 in. (1325 x 605 x 645 mm) (HxWxD),<br>height with opened top 74.6 in. (1895 mm) |




| | X | Y 1 | Y 2 | Z |
|---|---|---|---|---|
| **PB-S** | 23.8 in.<br>(605 mm) | 52.2 in.<br>(1325 mm) | 74.6in.<br>(1895 mm) | 25.4 in.<br>(645 mm) |

**Fig. 1:** Dimensions

| | |
|---|---|
| Weight | 220.5 lb (100 kg) |
| Power supply | 230V |
| Stabdards | CE, sampling according to ISO 5667-2/3-10 |

Subject to change without prior notice.

# 2 Safety information

Please read the entire manual before the equipment is unpacked, set up or operated. Pay attention to all danger and caution statements. Personal injury or damage to the equipment could occur if they are not observed.

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 Hazard information in this manual

***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 which, if not avoided, could result in death or serious injury.**

***CAUTION***

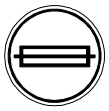
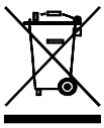
**Indicates a potentially or imminently hazardous situation that could result minor ormoderate injury.**

**Important note:** informationen that requires special emphasis

**Remark:** informationen that supplements points in the main text

## 2.2 Warning labels

Read all labels and notices attached to the equipment. Personal injury or damage to the equipment could occur if they are not observed. Any symbol on the equipment will appear along with a 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 goggles. |
|  | 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.<br>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. |

# 3 General information

## 3.1 Areas of application

The equipment is used for sampling aqueous liquids with a temperature between +32 … +104 °F (0°C … 40°C).

## 3.2 Functional description

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

## 3.3 Scope of delivery

The equipment is supplied with a tube and a manual.

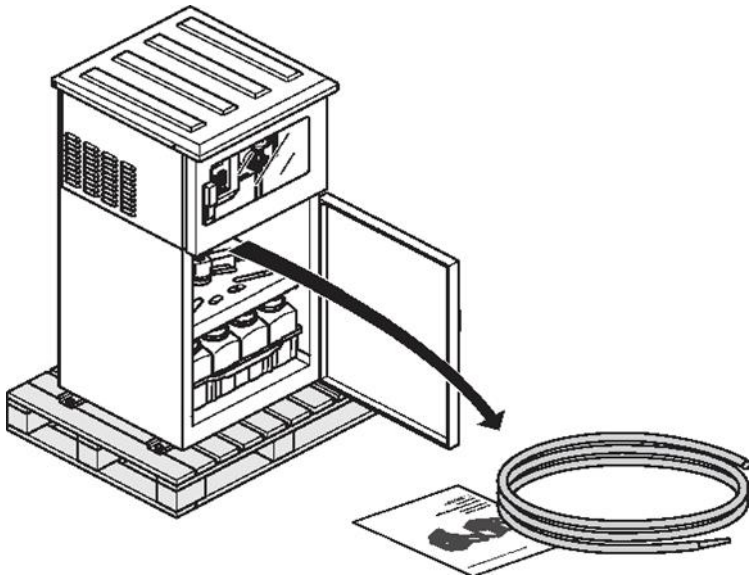


**Fig. 2:** Scope of delivery

# 4 Installation

***DANGER***

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

***DANGER***

**Select an appropriate installation location for the instrument.**

Plan out the mechanical mount before positioning poles or drilling holes. Make sure the mount has a sufficient bearing capacity. The dowels must be selected and authorized according to the condition of the wall.
The manufacturer shall accept no liability if the instrument is installed incorrectly.

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

Do not connect the electrical supply to the mains if the equipment has not been wired and fused correctly.

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, place an overload protection between mains and system.

Products intended by the manufacturer for outdoor use offer a higher level of protection against the penetration of liquids and dust. If these products are connected to a mains outlet with a cable and plug, rather than a permanently connected cable, the plug and outlet are much more susceptible to liquid and dust penetration. The operator must sufficiently protect the plug and outlet against liquid and dust penetration in accordance with local safety regulations. If the instrument is to be used outdoors, it must be connected to a suitable outlet with a protection type of at least IP44 (splash protection).

When setting up the device, make sure that the device can be easily disconnected from the power supply.

## 4.1 Mechanical installation

***DANGER***

**Select an appropriate installation location for the instrument.**

**Plan out the mechanical mount before positioning poles or drilling holes. Make sure the mount has a sufficient bearing capacity. The dowels must be selected and authorized according to the condition of the wall.**

**The manufacturer shall accept no liability if the instrument is installed incorrectly.**

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

**Remark:** For information on installationwith optional accessories, refer to the relevant installation instructions.

### 4.1.1 Required tools

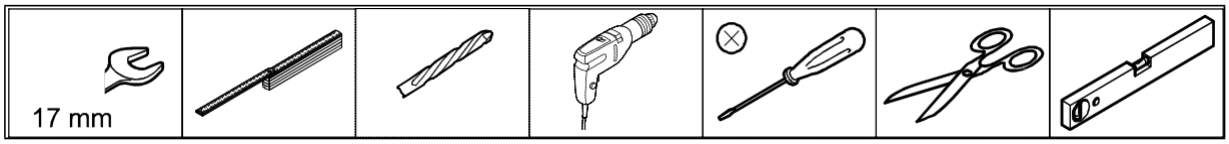
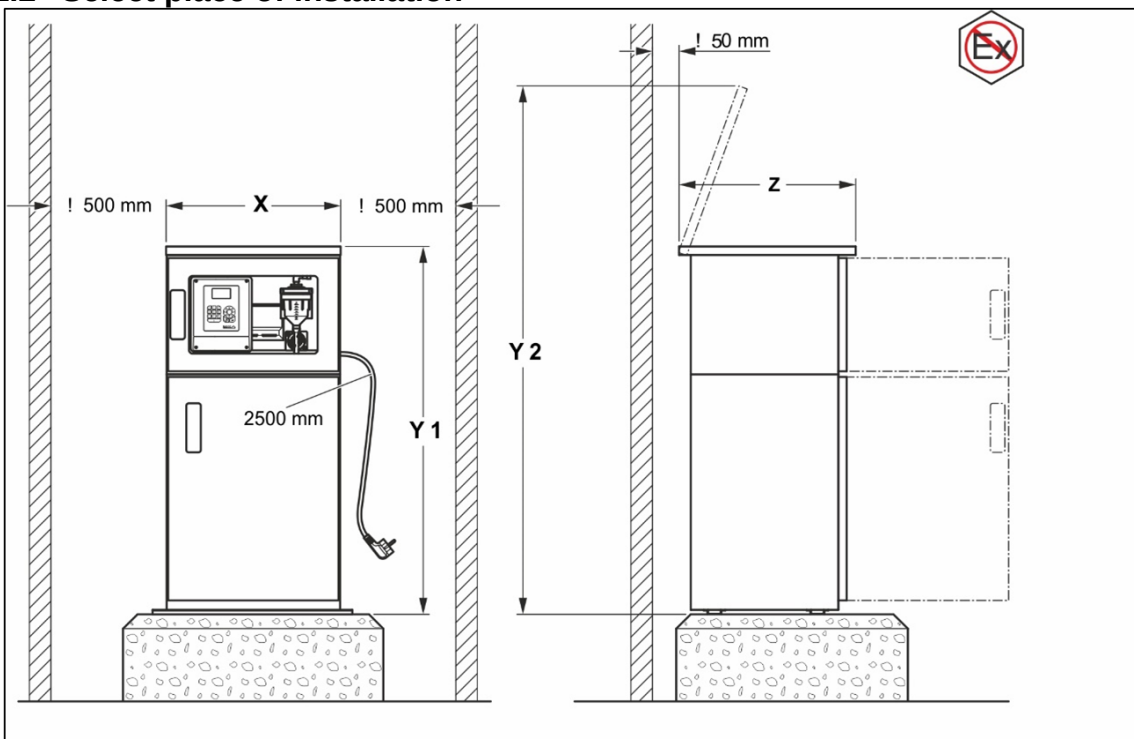
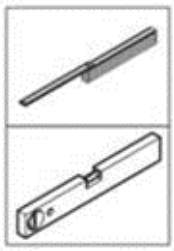



**Fig. 3:** Required tools (17 mm = 0.69 in.)

### 4.1.2 Select place of installation



| | X mm | Y 1 mm | Y 2 mm | Z mm |
|---|---|---|---|---|
| PB-S | 605 | 1320 | 1890 | 645 |

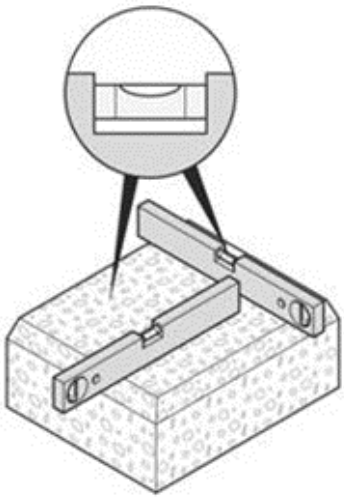
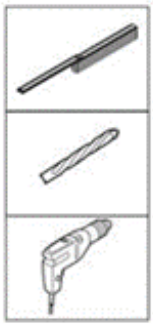


**Fig. 4:** Select place of installation



| | A mm | B mm |
|---|---|---|
| PB-S | 660 | 383 |

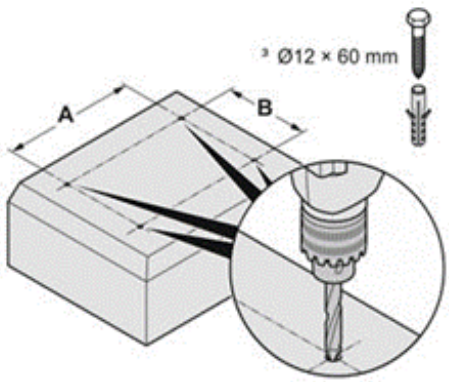



**Fig. 5:** Prepare place of installation

### 4.1.3 Unpacking

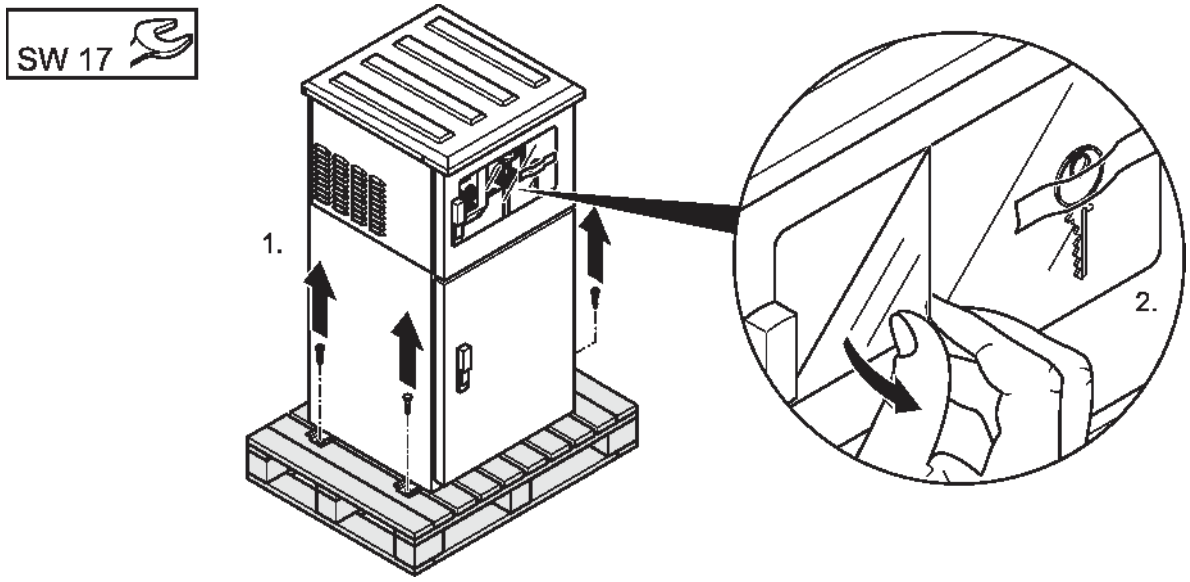



**Fig. 6:** Move the equipment from the transport pallet

### 4.1.4 Setup

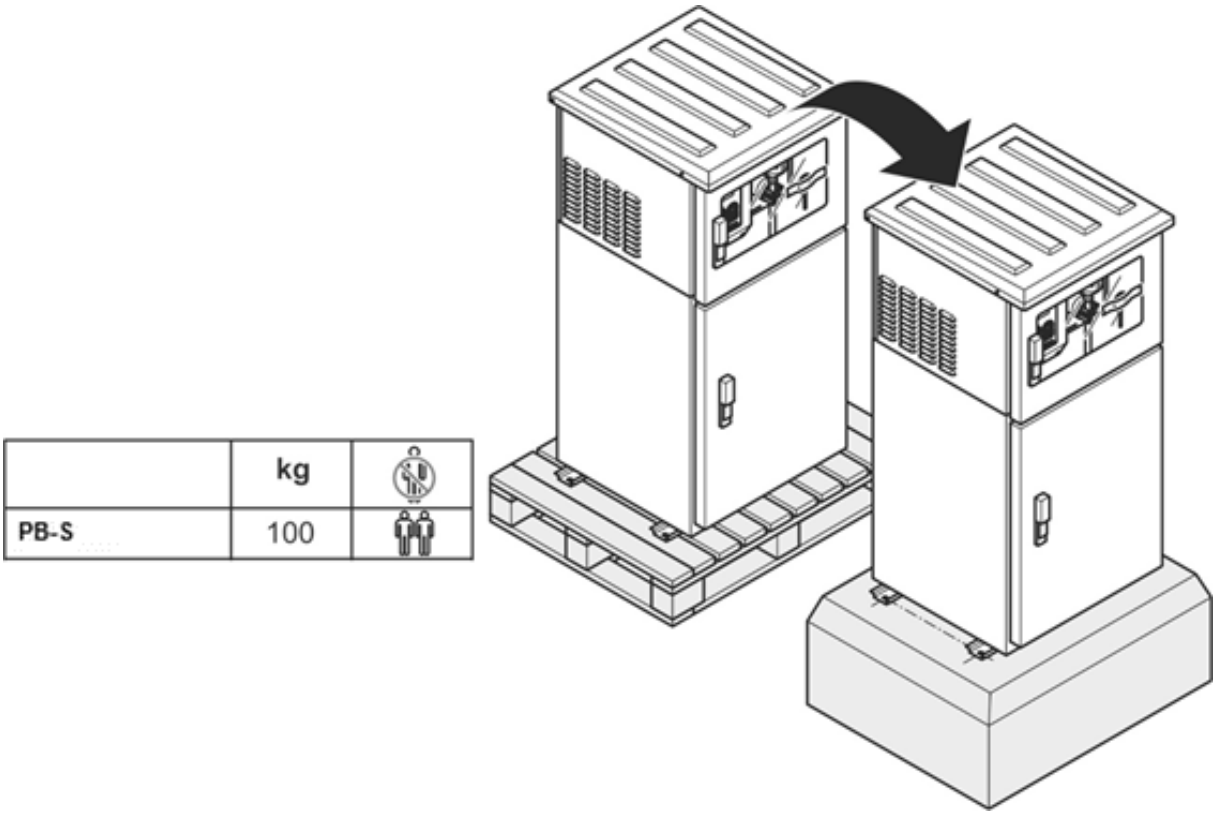



**Fig. 7:** Set up the equipment

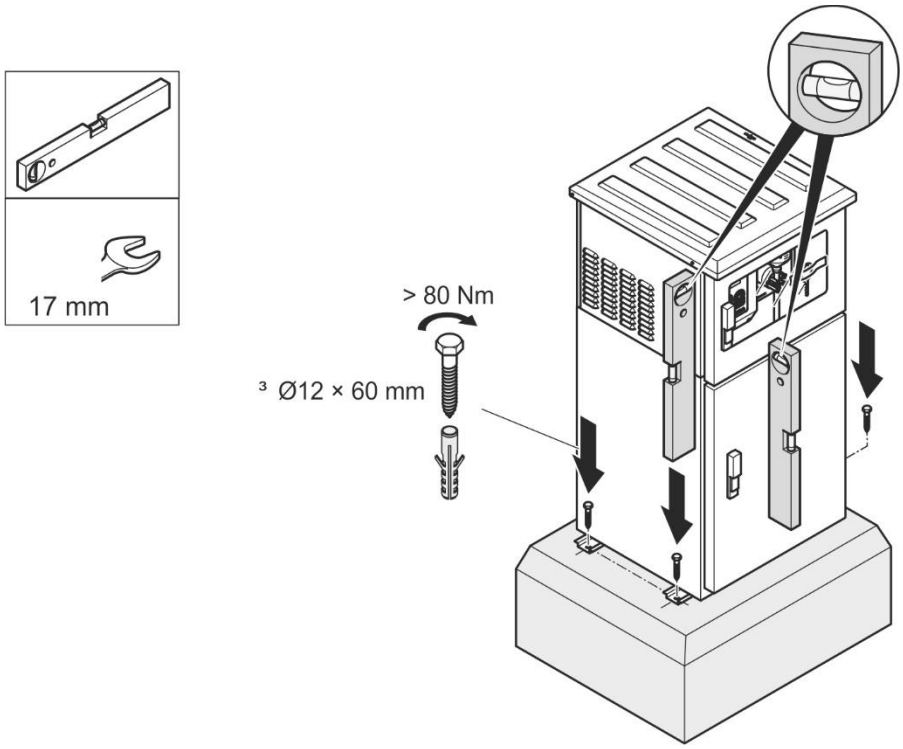



**Fig. 8:** Align and secure the equipment

## 4.2 Electrical connections

***DANGER***

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

***DANGER***

***Do not connect the electrical supply to the mains if the equipment has not been wired and fused correctly.***

***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, place an overload protection between mains and system.***

### 4.2.1 Prepare electrical installation

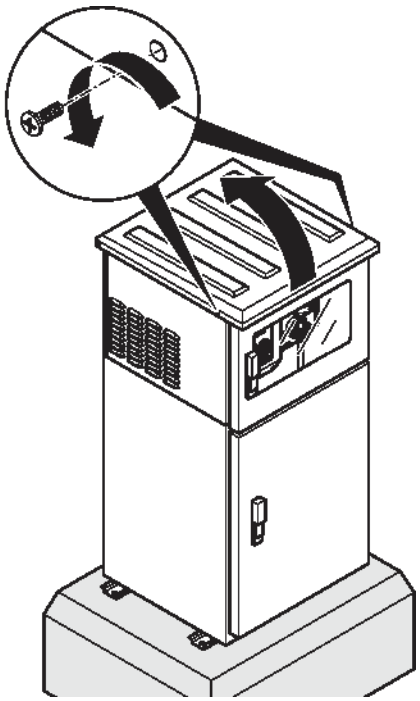


**Fig. 9:** Loosen the screws and remove the cover

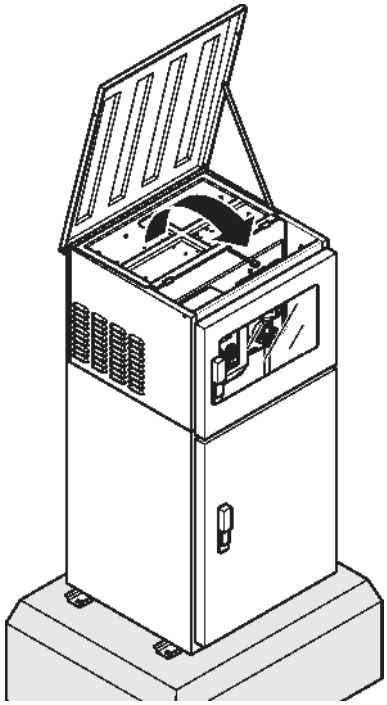


**Fig. 10:** Lift up the cover

### 4.2.2 Wiring diagram

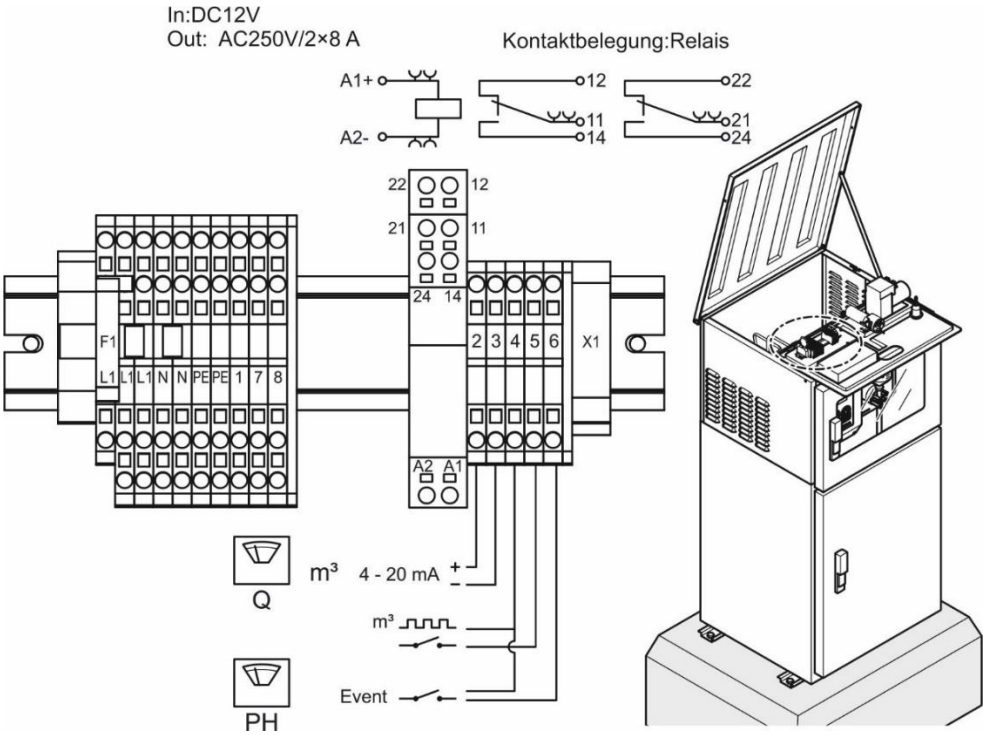



**Fig. 11:** Wiring diagram

### 4.2.3 Complete the electrical installation

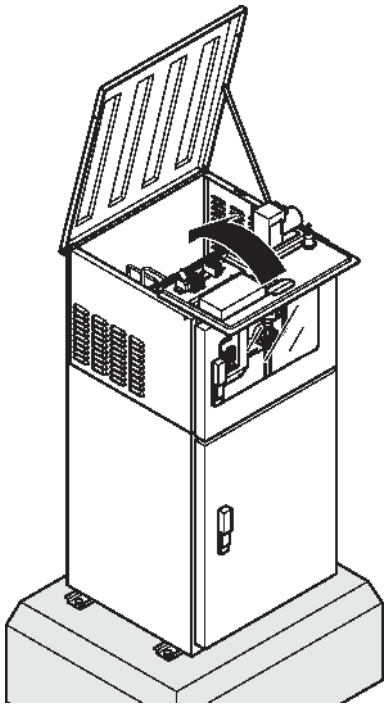


**Fig. 12:** Close cover

If the suction hose is not connected immediately, close the housing lid
(see 5.1 Hose connection fig. 16 and 17)

# 5 Commissioning of the device

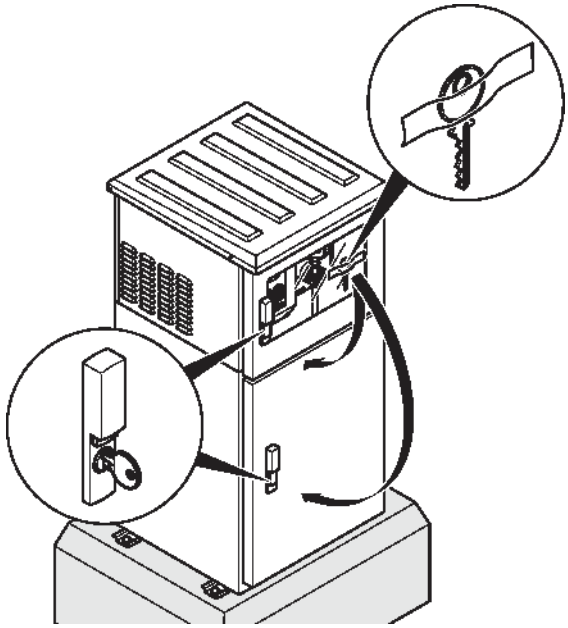


**Fig. 13:** Storage location of key (only with option "Key")

## 5.1 Hose connection

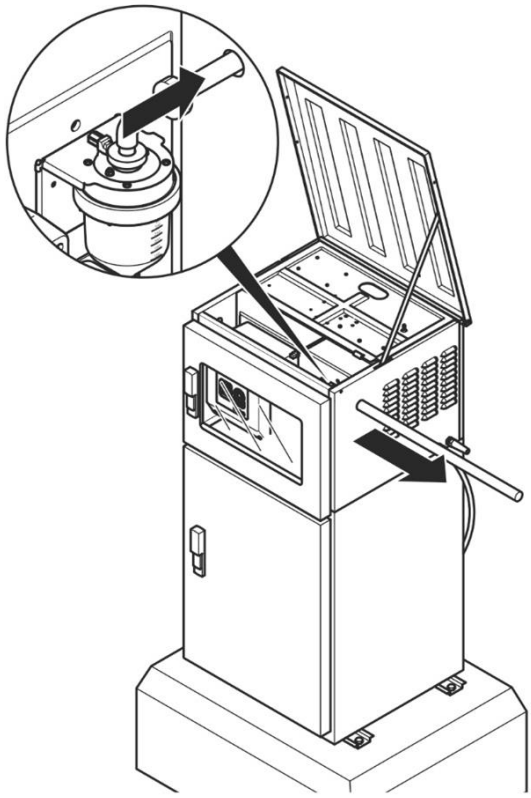


**Fig. 14:** Feed the suction hose through housing opening

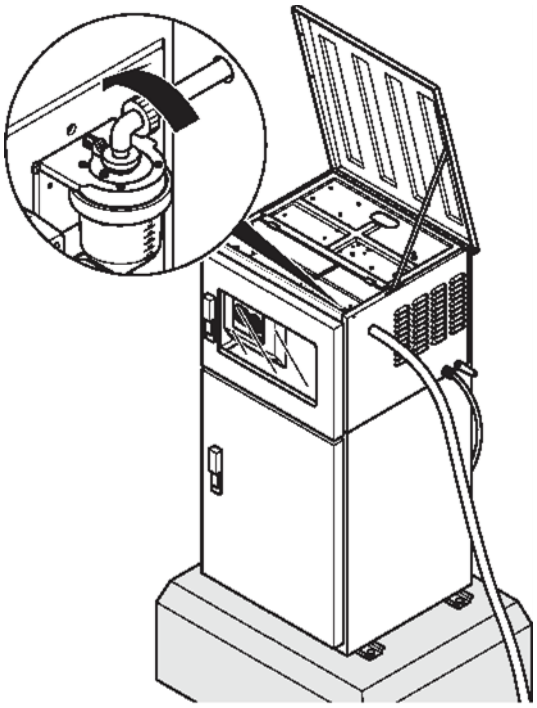


**Fig. 15:** Screw in the union nut

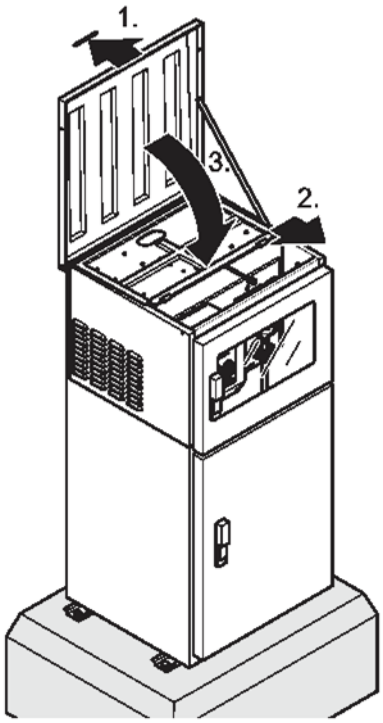



**Fig. 16:** Close the lid

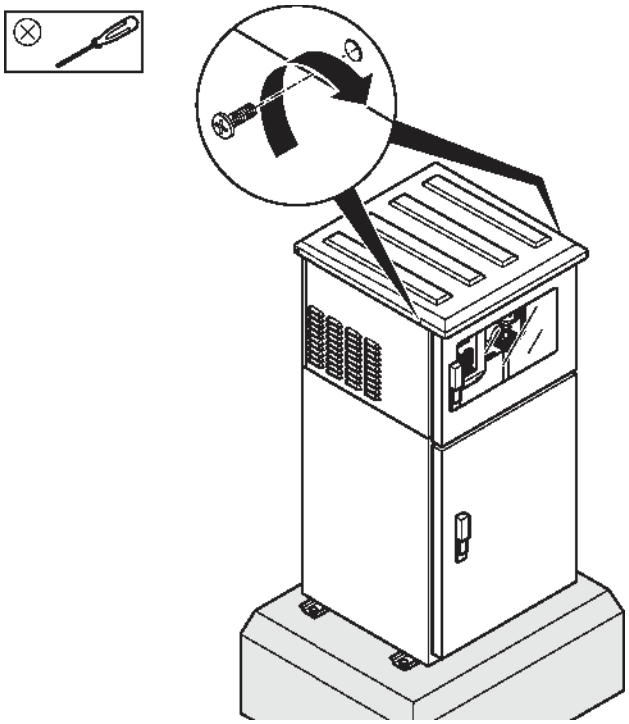


**Fig. 17:** Screw down the lid tightly

Position the hoses in accordance with the following installation diagram.

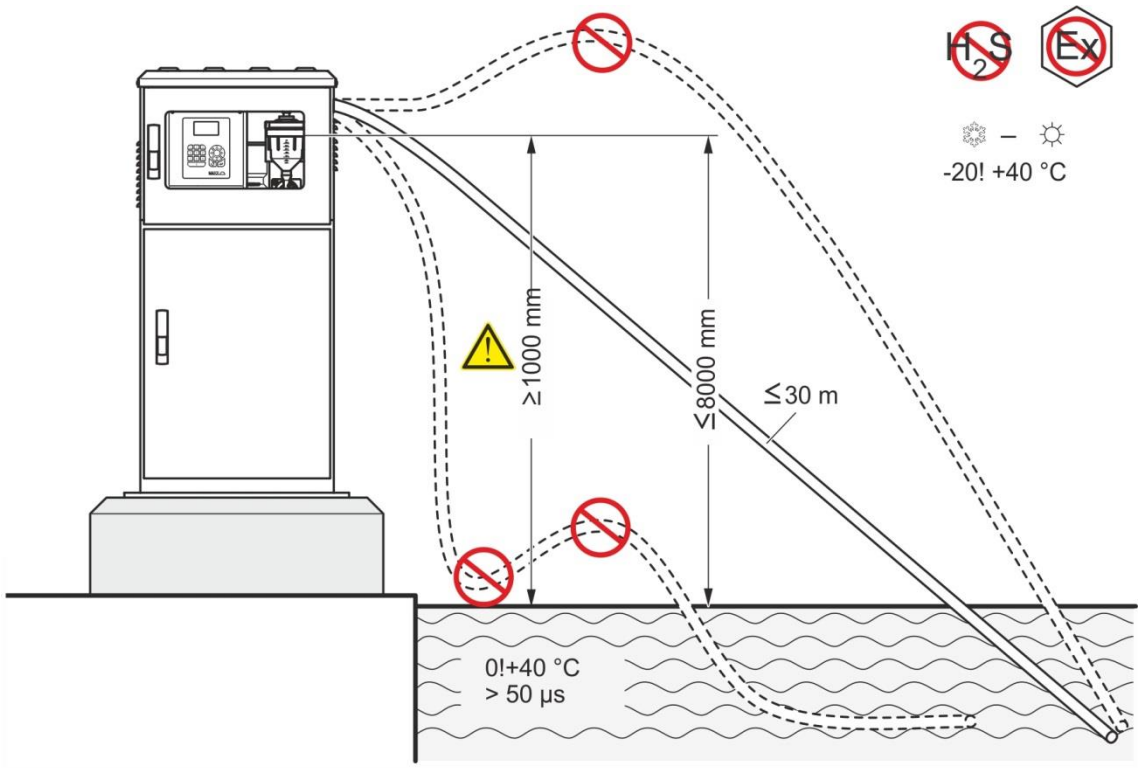



**Fig. 18:** Installation diagram

## 5.2 Set the individual sample volume

### 5.2.1 Plastic dosing vessel

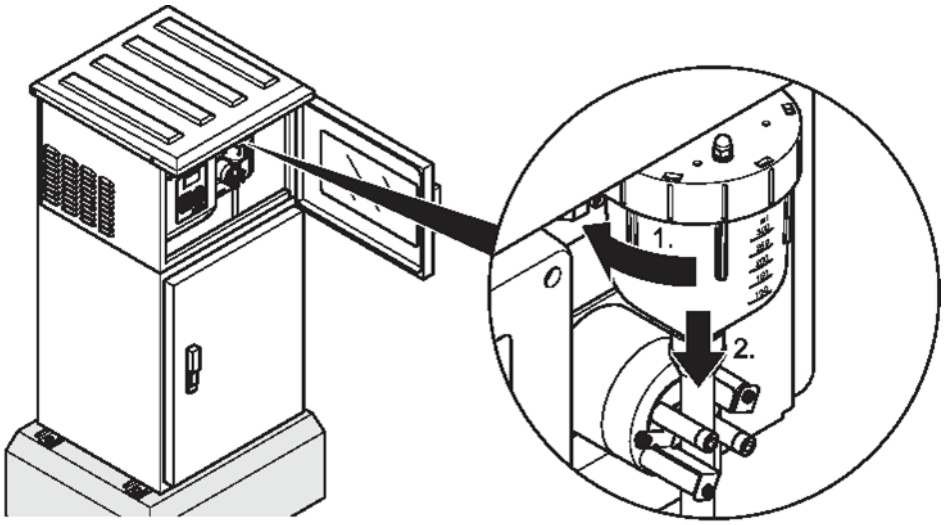



**Fig. 19:** Release the plastic dosing vessel

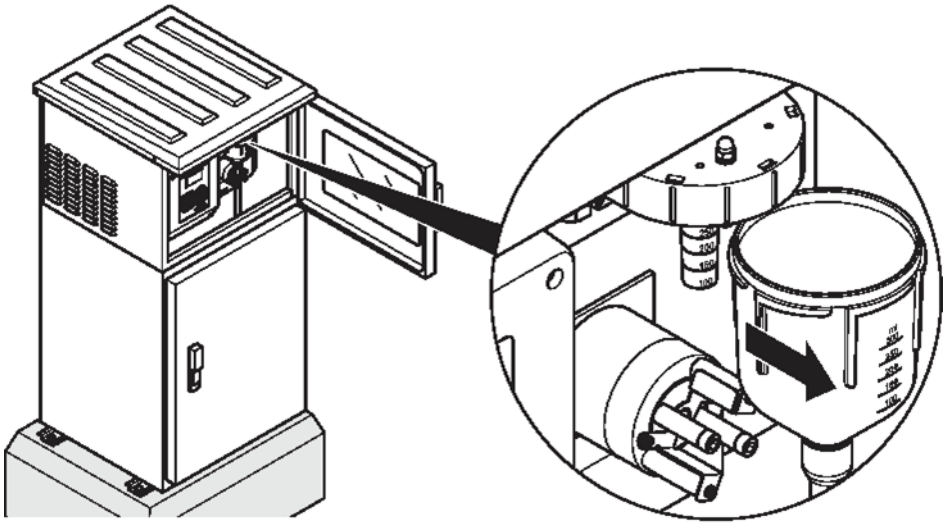


**Fig. 20:** Remove the plastic dosing vessel

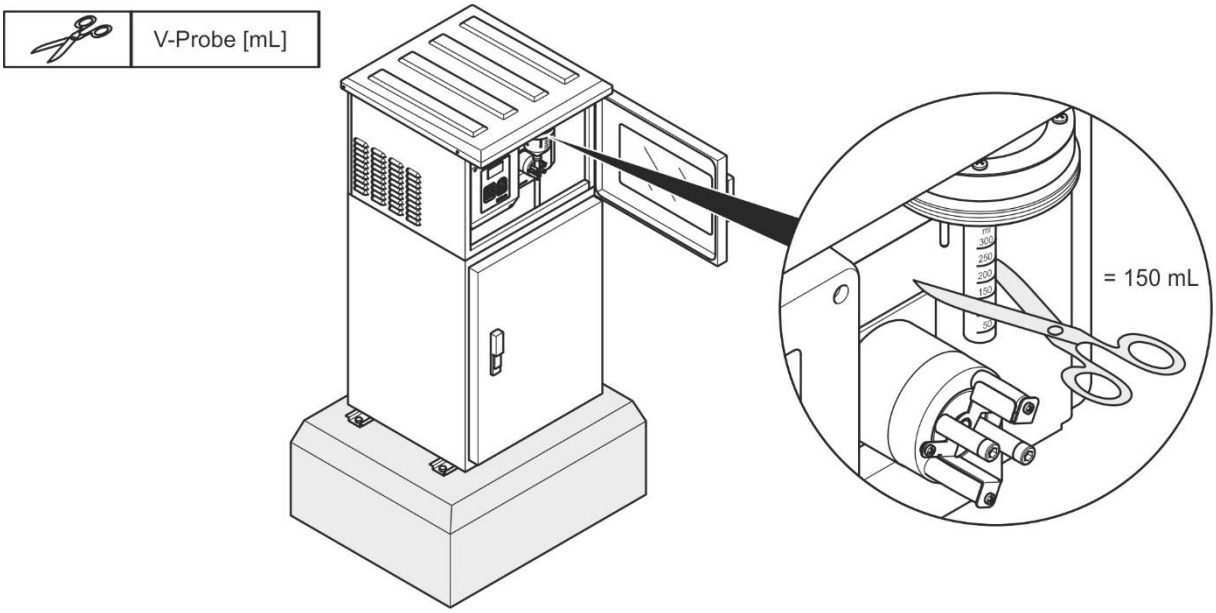



**Fig. 21:** Cut the dosing tube to set the sample volume (150 ml = 0.315 pt.)

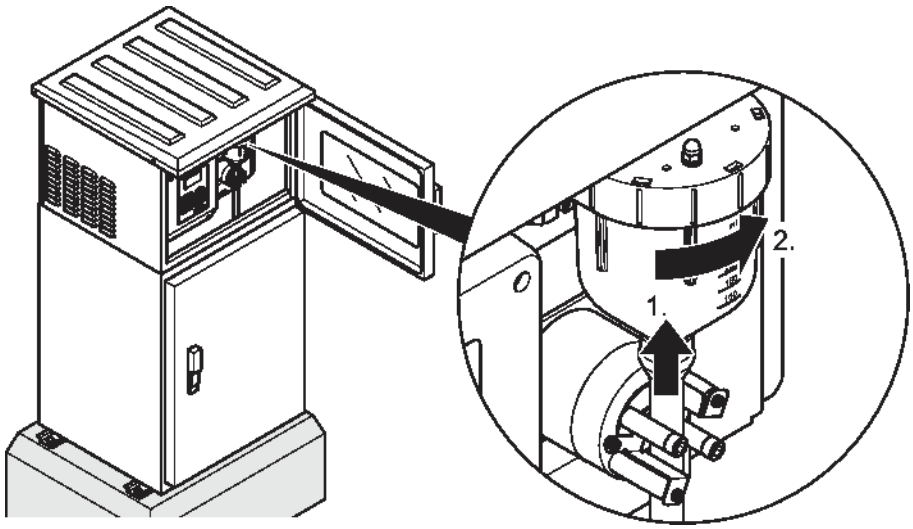



**Fig. 22:** Reinstall the plastic dosing vessel

### 5.2.2 Glas dosing vessel

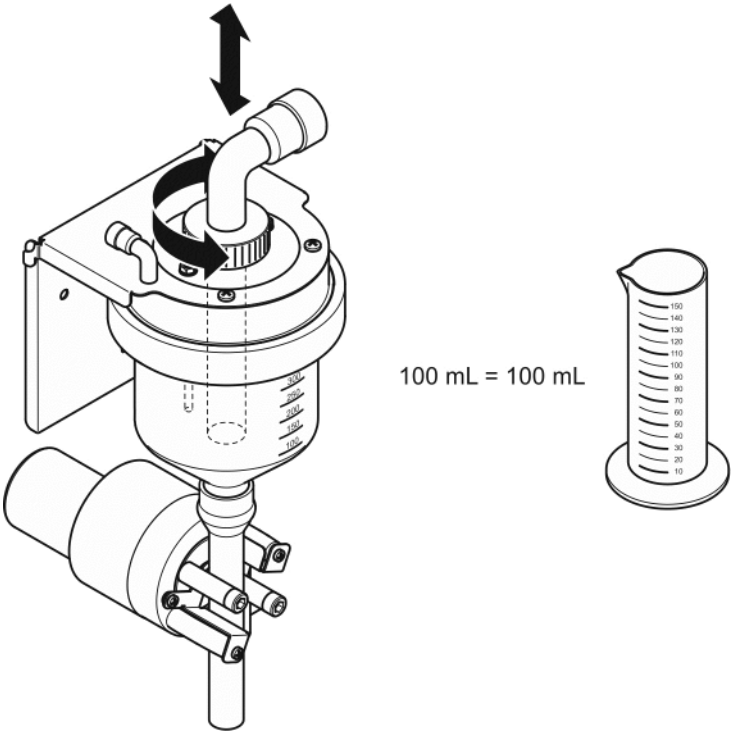



**Fig. 23:** Displace the dosage tube to set the sample volume

### 5.2.3 Dosing vessel for flow-proportional sampling

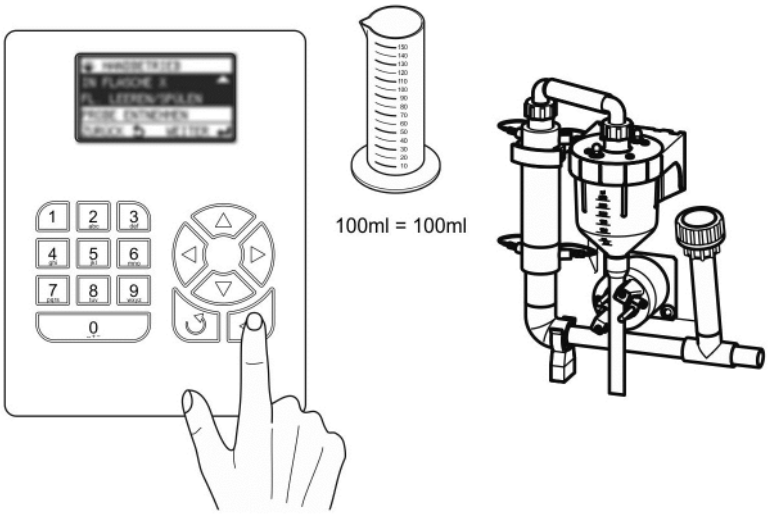



**Fig. 24:** Calibrate the flow-proportional dosing vessel via the System settings men

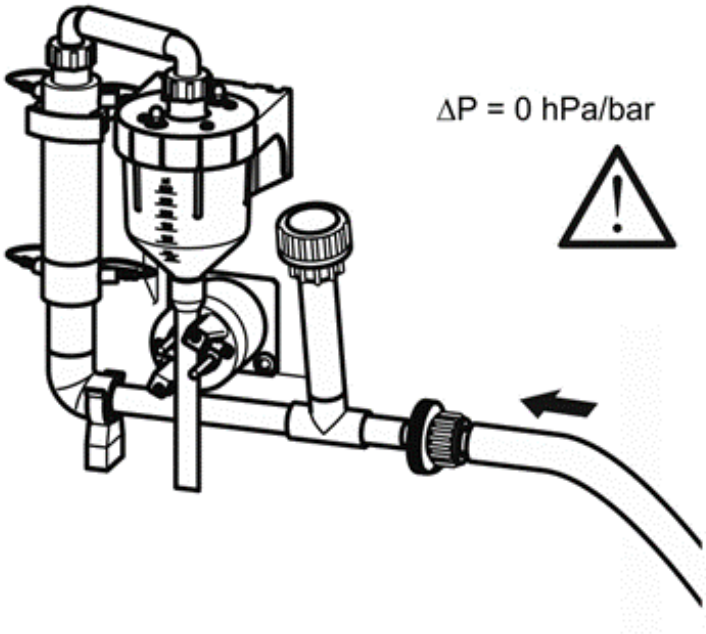



**Fig. 25:** The flow-proportional dosing vessel may only be used if there is NO counter pressure

## 5.3 Preparing sample containers

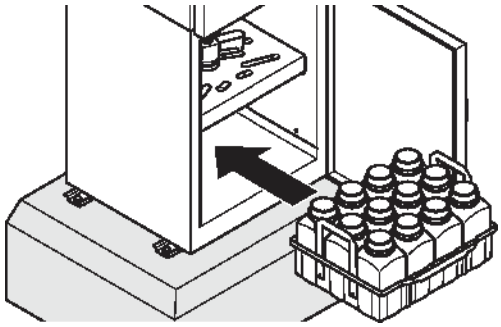


**Fig. 26:** Put the empty bottles in the housing

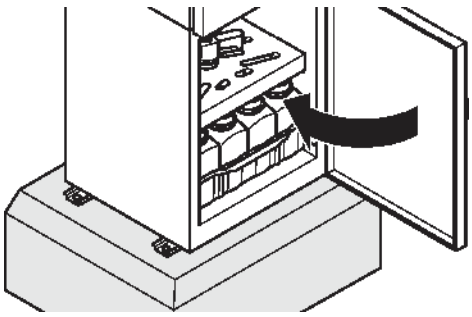


**Fig. 27:** Close the door

## 5.4 Connect the equipment to the mains

Make sure that:

- the equipment has been fully prepared for commissioning
- the values on the rating label correspond with those of the mains supply
- the correct plug has been attached or the direct wire has been implemented correctly
- the equipment can be put into operation without any risks.

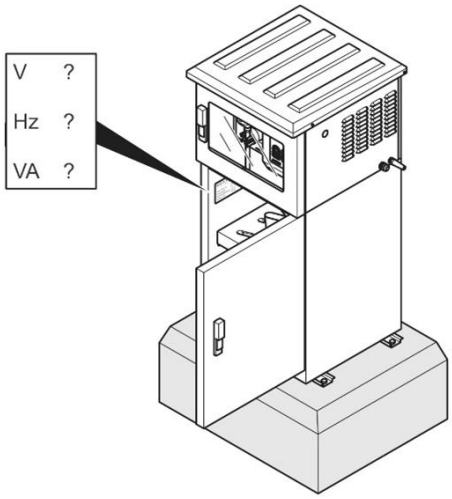



**Fig. 28:** Rating label

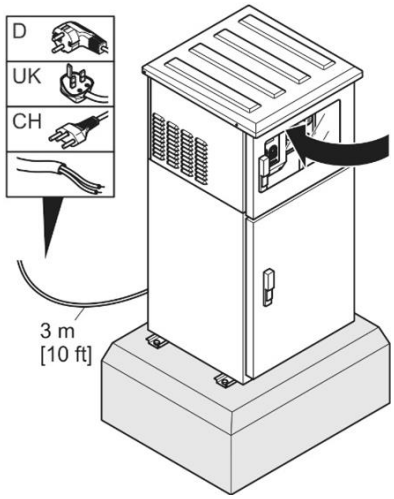



**Fig. 29:** Possible connection configurations

# 6 Operation

## 6.1 Control unit operation

All the equipment functions are software-controlled.

### 6.1.1 Programming

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

### 6.1.2 Keyboard layout/function

The equipment is programmed by the operator

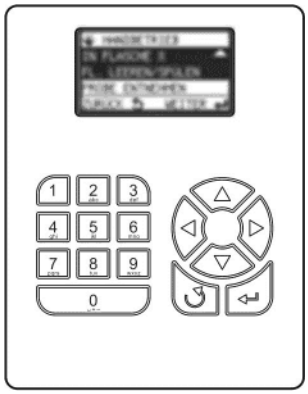
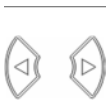
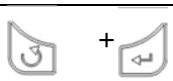


**Fig. 30:** Control panel

**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 |  |
| Selection within the menu | Arrow key |  |
| Confirm the selection<br>(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 |  |
| Restore factory settings (Display = „**load factory settings**“)<br>Hold Back-key until boot process is finished | Back key |  |

**Example:** A setting needs to be changed.

1. Press the arrow key, to move the cursor to the desired position
2. Press the Enter Key to execute the desired function

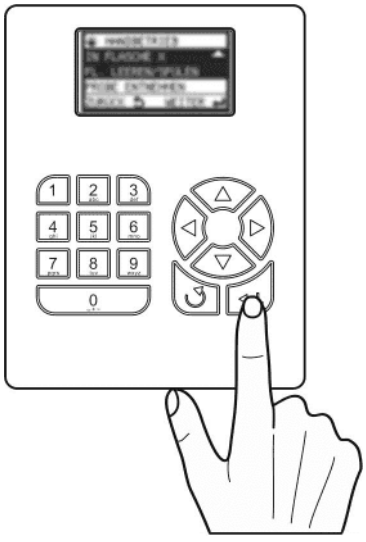


**Fig. 31:** Start the program

Depending on the program section

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

**Note:** General rule: If you press the Back key

– the action is cancelled or

– the navigation takes one step back in the menu

## 6.2 Replace the sample bottles

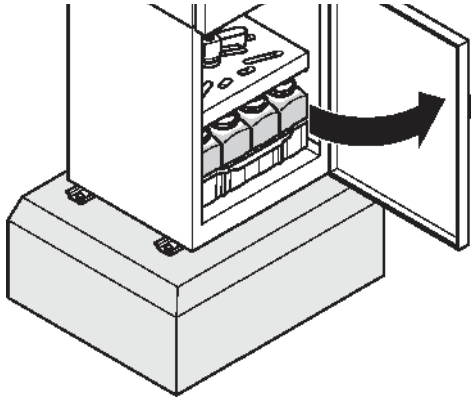


**Fig. 32:** Open the door

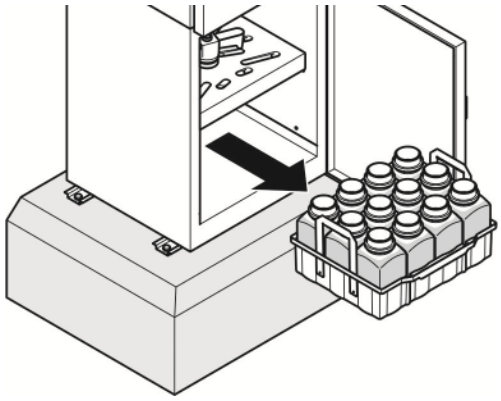


**Fig. 33:** Remove the full bottles

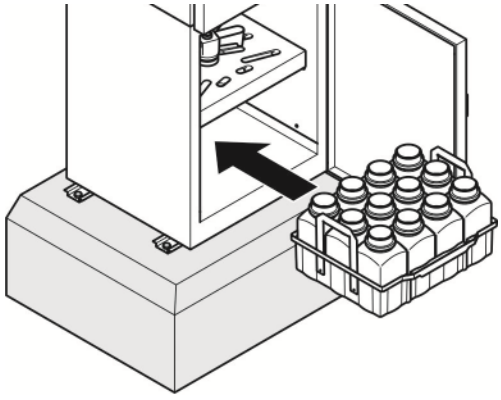


**Fig. 34:** Replace with empty bottles

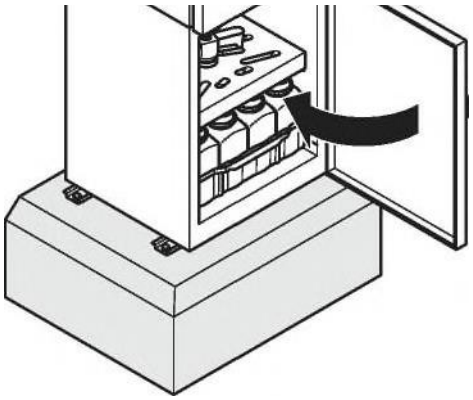


**Fig. 35** Close the door

# 7 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***

## 7.1 Maintenance work

The sampler is maintenance-free. Thus the operator does not need to carry out any maintenance work.

## 7.2 Cleaning

### 7.2.1 Clean the housing and distributor

***ATTENTION!***

***Manual rotation of the distributor can damage the drive.***
***Never rotate the distributor 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.

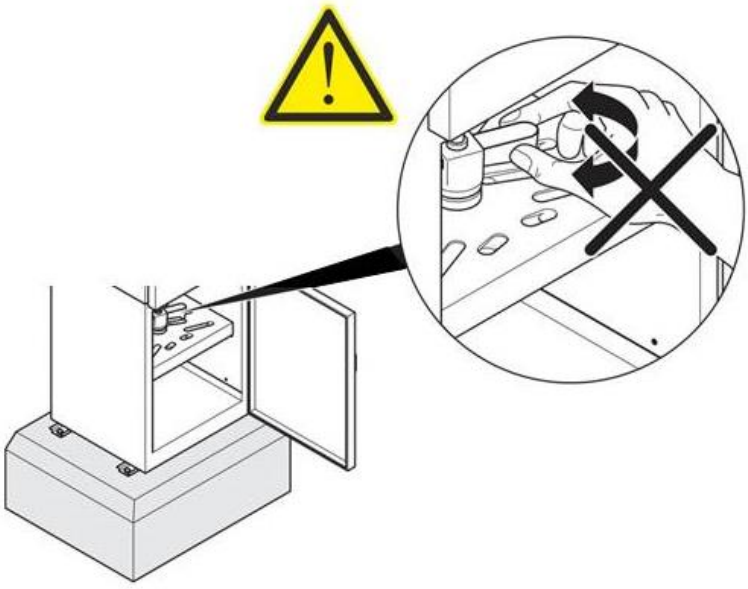


**Fig. 36:** NEVER rotate the distributor unit manually

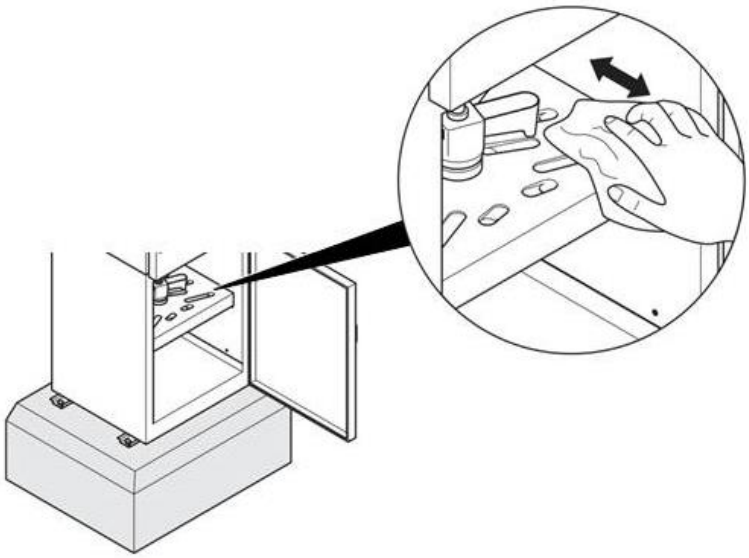


**Fig. 37:** Clean the distributor unit

### 7.2.2 Cleaning the dosing vessel

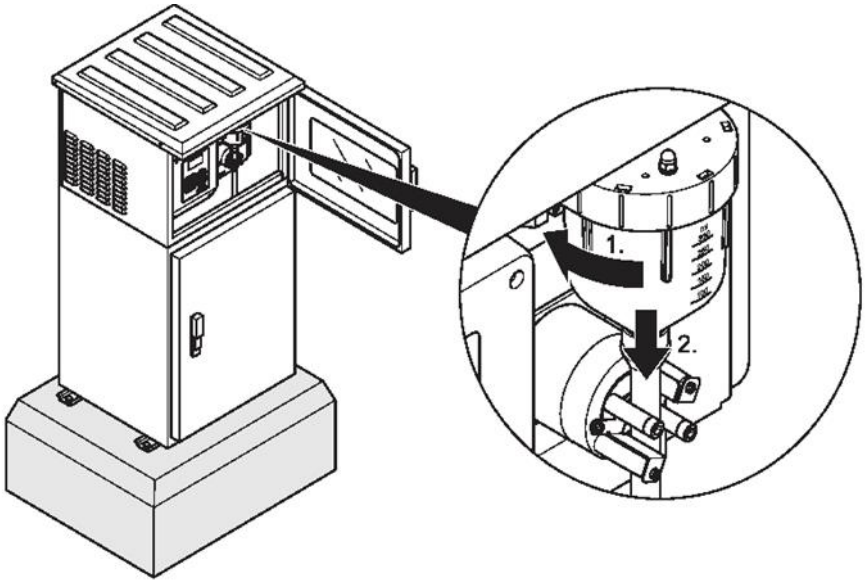



**Fig. 38:** Release the dosing vessel

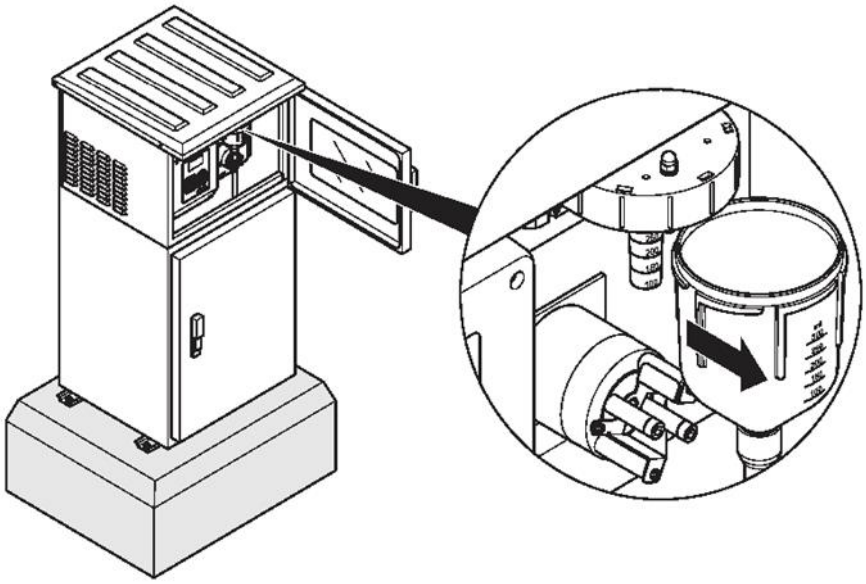


**Fig. 39:** Remove the dosing vessel

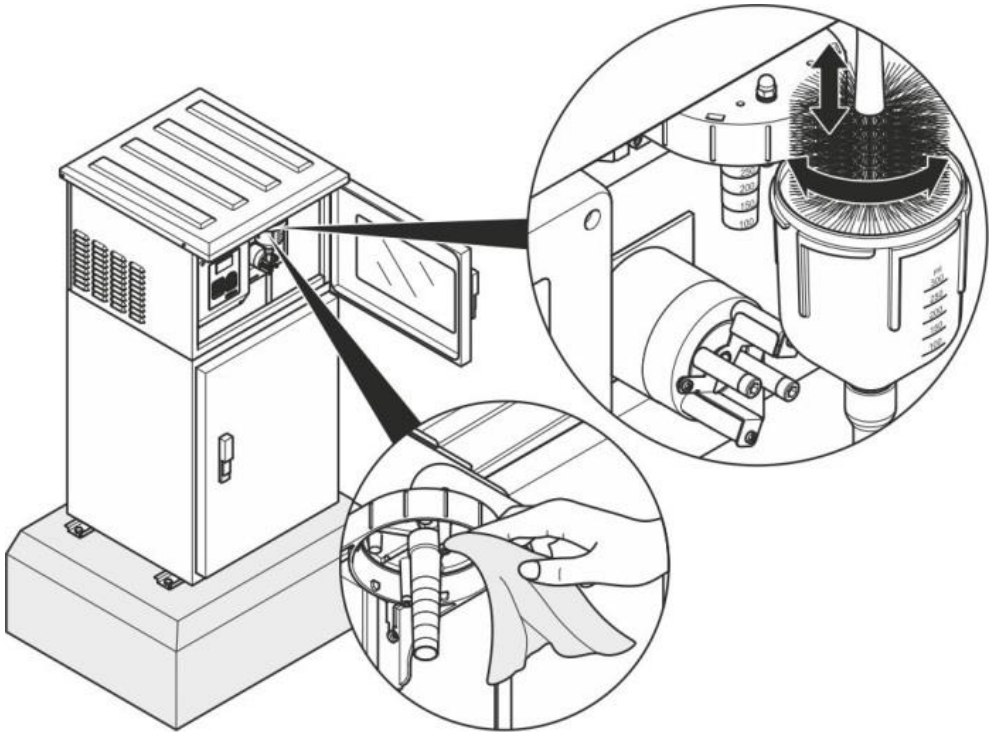


**Fig. 40:** Clean the dosing vessel

77134d02

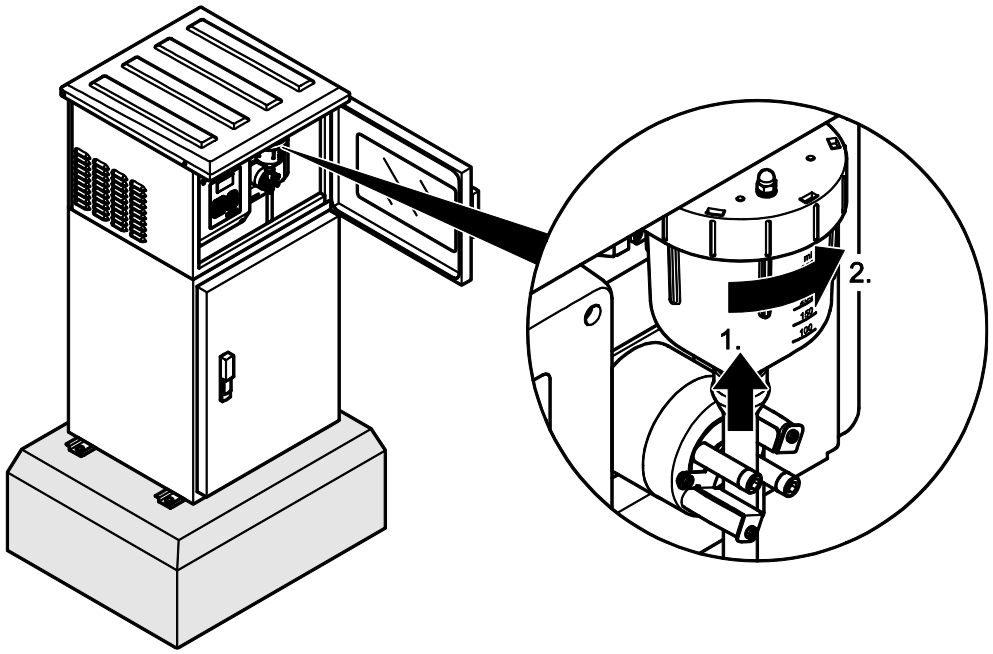
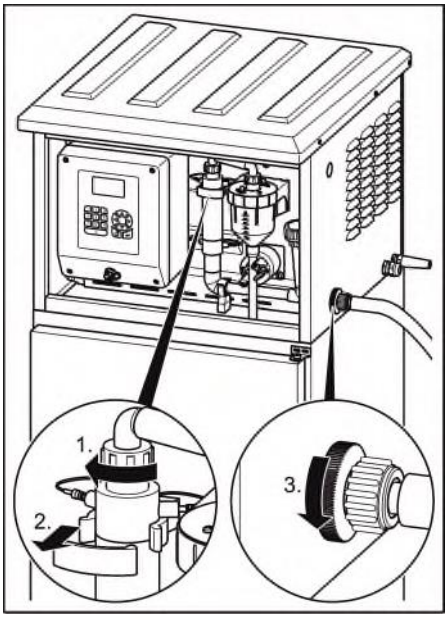
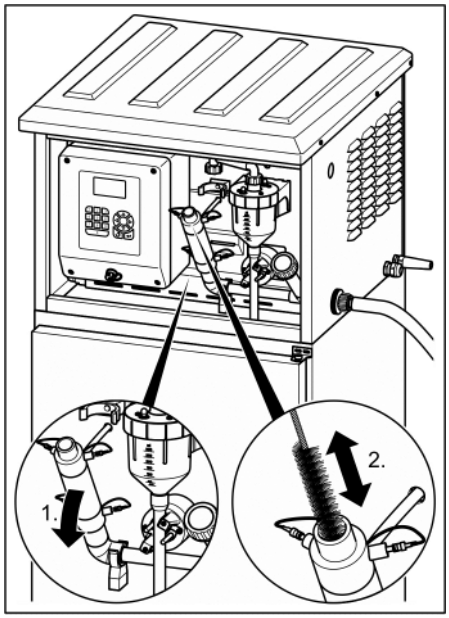



**Fig. 41:** Install the dosing vessel

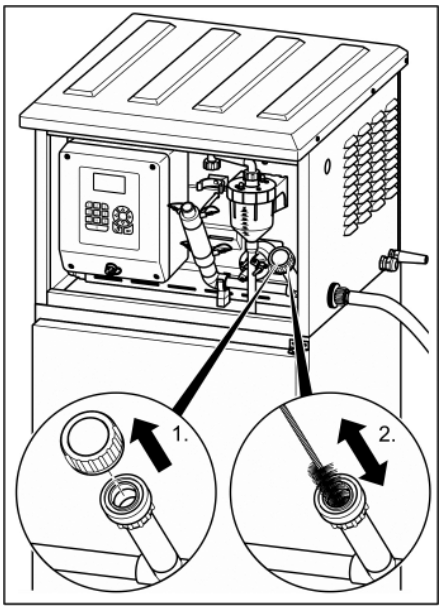
### 7.2.3 Cleaning measuring tube (flow-proportional dosing-system)



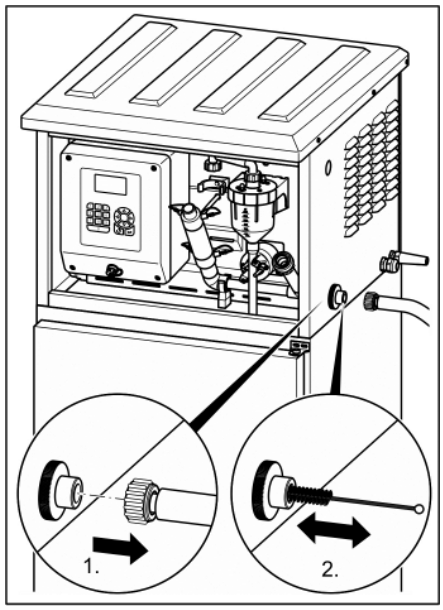

1.




2.

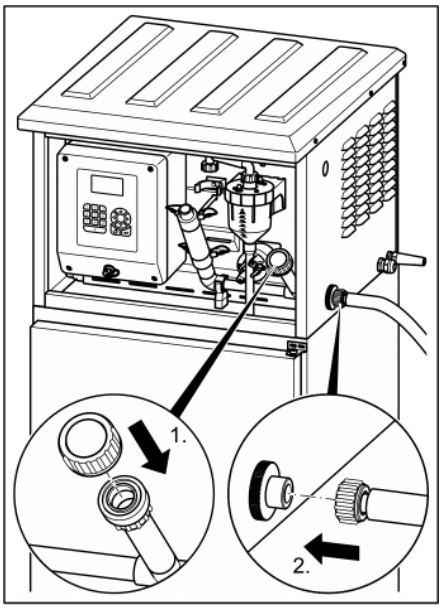



3.

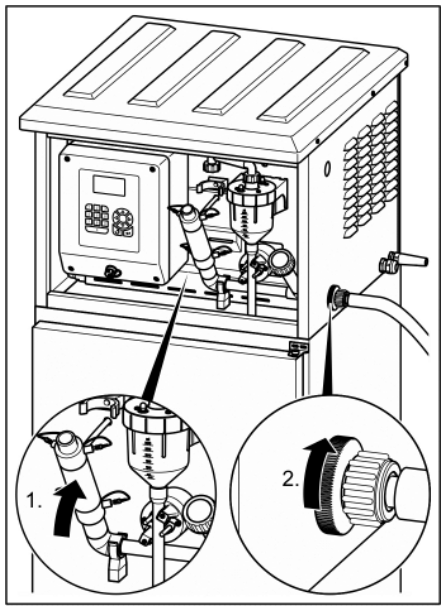



4.

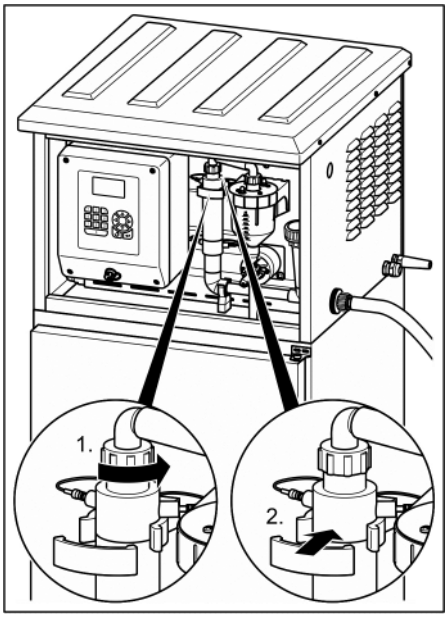
**Fig. 42, 1-4:** Cleaning measuring tube (flow-proportional dosing-system)




5.




6.




7.

**Fig. 43, 5-7:** Cleaning measuring tube (flow-proportional dosing-system)

## 7.3 Troubleshooting

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

### 7.3.1 Open the housing to change the fuse

See 4.2.1 Prepare electrical installation

### 7.3.2 Change the fuse

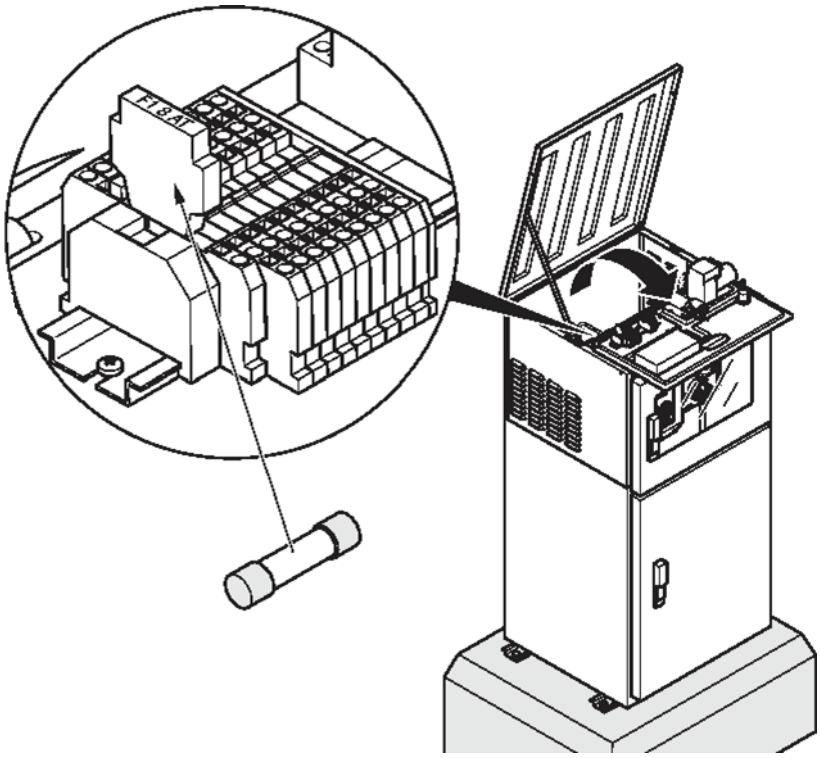



**Fig. 44:** Fuse support

If the problem is not fixed after having checked or changed the fuse, please contact the manufacturer.

### 7.3.3 Reassemble the housing

See 4.2.3 Complete the electrical installation
See 5.1 Hose connection

## 7.4 Instrument decomissioning and storage

1. Remove all liquids and, if necessary, solid matter from the feed and drain lines and sample containers and clean as required.
2. Close all active programs.
3. Switch off the equipment..

# 8 Accesories

| Model | Description | Order number |
|---|---|---|
| **1/PB-S** | 1 L PE sample bottle with sealing cap for PB-S/R24 | 203303 |
| **2,9/PB-S** | 2,9 L PE sample bottle with sealing cap for PB-S/R12 | 503307 |
| **25/PB** | 25 L PE sample container for PB-W and PB-S/1 | 503314 |
| **Schlauch/12mm/PB-S** | PVC suction tubing, 12mm I.D., fabric reinforced, per meter | 503338 |
| **SR/180mm/PB-S** | Suction piece V2A, length 180 mm, for tubing 12 mm ID (503338) | 503340 |
| **EVSR/PB** | Pick off-attachment to mount the suction tube, pendular or fixed (wall mounting in channel) | 503341 |
| **SK/12mm/PB-S** | Strainer for suction piece SR/180 mm/PB (503340), 12 mm | 503344 |
| **SG/PB-S** | Stainless steel base frame for PB-S, 40 cm x 70 cm x 41 cm (HxWxD) | 503385 |
| **VARDF/PB-S** | Variable flow-through unit | 503392 |
| **SSM/PB** | Collective fault signal (always permanently defined as the first signal) | 503427 |
| **LED-In/PB-S** | LED interior lighting with door contact switch | 503387 |

# 9 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.

Xylem |'zīləm|

1) The tissue in plants that brings water upward from the roots;

2) a leading global water technology company.

We’re a global team unified in a common purpose: creating advanced technology solutions to the world’s water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

Service and Returns:

Xylem Analytics Germany
Sales GmbH & Co. KG

WTW

Am Achalaich 11
82362 Weilheim
Germany

Tel.: +49 881 183-325
Fax: +49 881 183-414
E-Mail wtw.rma@xyleminc.com
Internet: www.xylemanalytics.com

xylem
Let’s Solve Water

Xylem Analytics Germany GmbH
Am Achalaich 11
82362 Weilheim
Germany