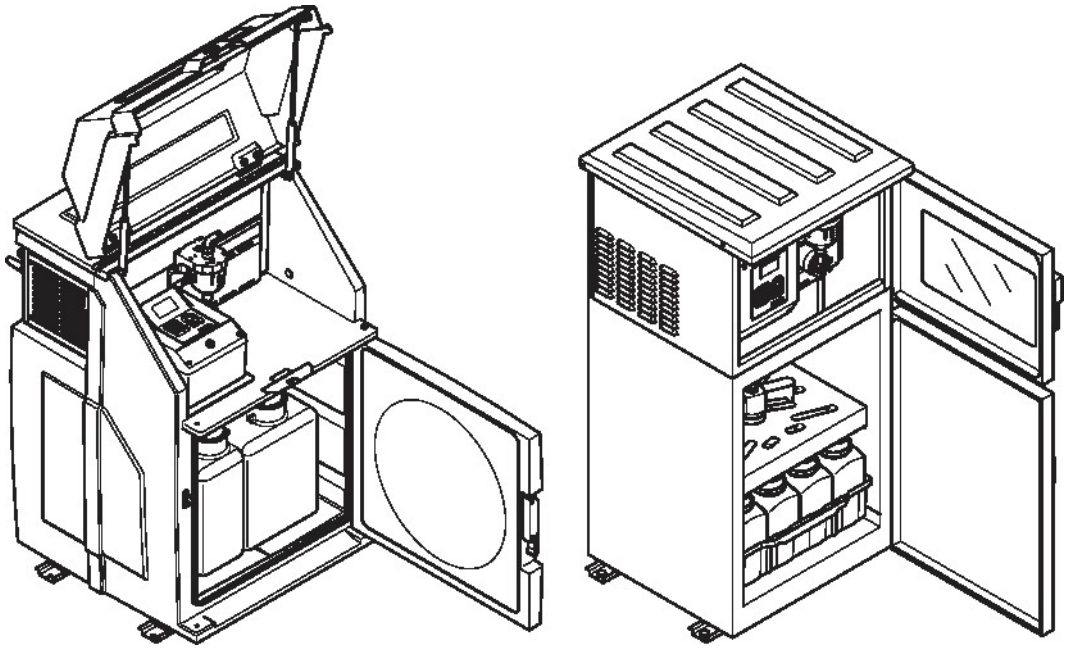
MAXX®

Mess- und Probenahmetechnik GmbH

Operating instructions
Water sampler

MAXX
SP5 S /-B /-M /-F /-A /-MS
+
SP5 C



Made in Germany

Remark:

Access code for program changes or changes of system settings:

Password:	6299
Your password:	

Contents

Electrics	
Power supply	230 V / 50 (opt. 60) Hz., 16 A fuse
Power consumption	Approx. 350 VA
Interface	Mini-USB conector for data download by using Maxxware Connect PC-software
Environment	
Medium temperature	0 to +40 °C
Ambient temperature	–20 to +43 °C
Installation	indoor and outdoor
Altitude	up to 2000m
Relative humidity	80%
Degree of pollution	2
Suction height	≤ 8 m
General specifications	
Maintenance requirements	Almost Maintenance-free, only cleaning
Weight	See figure 10, page 15 and figure 11, page 15
Dimensions (h x w x d)	See figure 1
Certification	
Certification	CE, Sampling in accordance with ISO 5667-10, EN16479

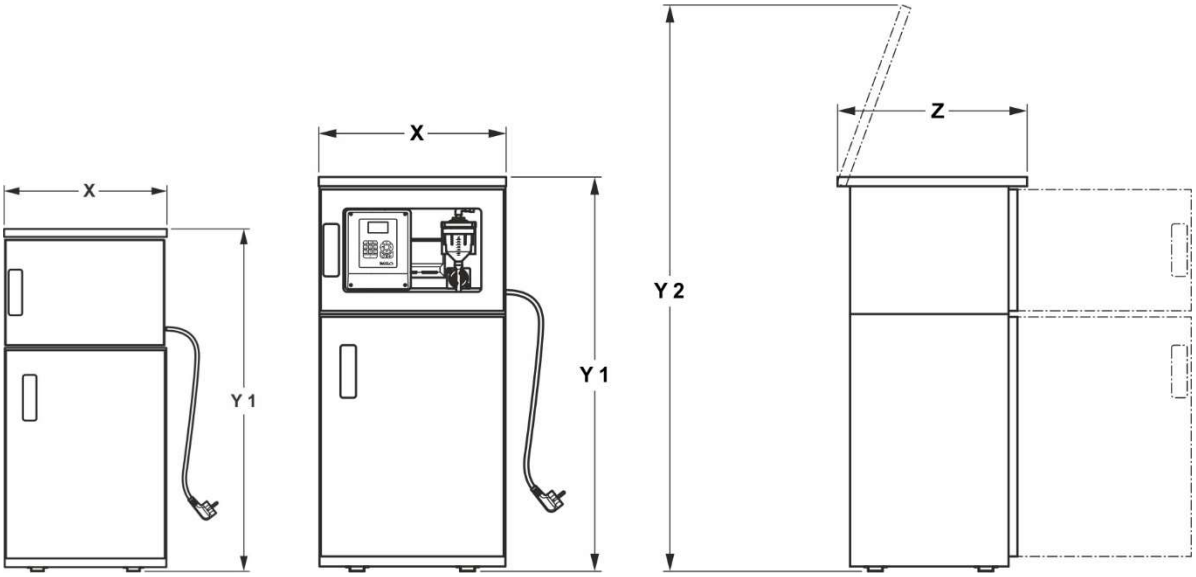
Subject to change without prior notice

Only for SP5 C

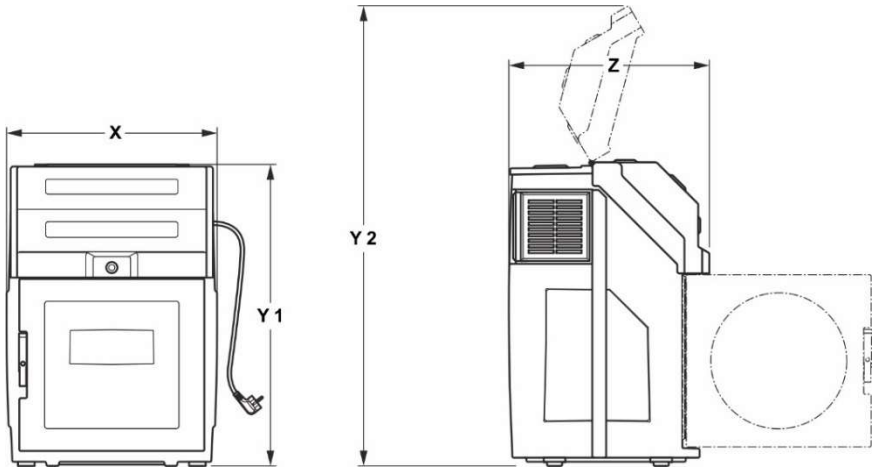
General specifications	
Housing	Double-walled stainless steel (material 1.4301/ SS304) / PS / PC (GF10) with 50 mm insulation. Housing separated in sample compartment and control compartment, each with door. Protective top made of Styrosun which can be opened for connection and maintenance works. - upper door without window - option: Status LED green/red
Sampling method	Vacuum system 15-320 ml
Bottle variants	Plastic 1 x 25 L, 1 x 50 L, 2 x 10 L 4 x 6,0 L, 4 x 10 L, 4 x 14 L, 12 x 2,9 L, 24 x 1,0 L Glass 12 x 2,0 L 24 x 1,0 L

Subject to change without prior notice

1.1 Dimensions



SP5 C SP5 S



SP5 B

	X mm	Y 1 mm	Y 2 mm	Z mm
SP5 C	625	1125	1695	648
SP5 B	760	1100	1640	725
SP5 S	605	1325	1895	645
SP5 S-M	605	1475	2030	645
SP5 S-F	605	1325	1895	645
SP5 S-F (23 Flaschen)	715	1415	2120	810
SP5 S-A (2–12	605	1325	1895	645
SP5 S-A (24 Flaschen)	715	1415	2120	810
SP5 S-MS	1200	1690	2260	645

figure 1 Dimensions

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.

2.1.1 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.

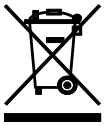
CAUTION
Indicates a potentially or imminently hazardous situation that could result in minor or moderate injury.

Important note: information that requires special emphasis.

Remark: information that supplements points in the main text.

2.1.2 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. 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

- Sample extraction of liquid aqueous substances, temperature range: 0°C to 40°C.
- The sampler is designed for operation in non-hazardous areas (no explosion risk).
- The sampler can be operated at ambient temperatures from -20°C to +43°C.
- Sampling from pressurised lines is **not** possible without optional accessories.
- The device is weather-proof and suitable for outside operation.
- We generally recommend shading the device from direct sunlight when installing it outdoors. This is important to get the best performance from the cooling system and to prevent the electronics from overheating. It is also essential to ensure that any housing is well ventilated and that no heat accumulation can occur (see also minimum distances under 3.1.2.)

2.2.2 Functional description

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

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 Scope of delivery

The equipment is supplied with a tube and a manual.

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

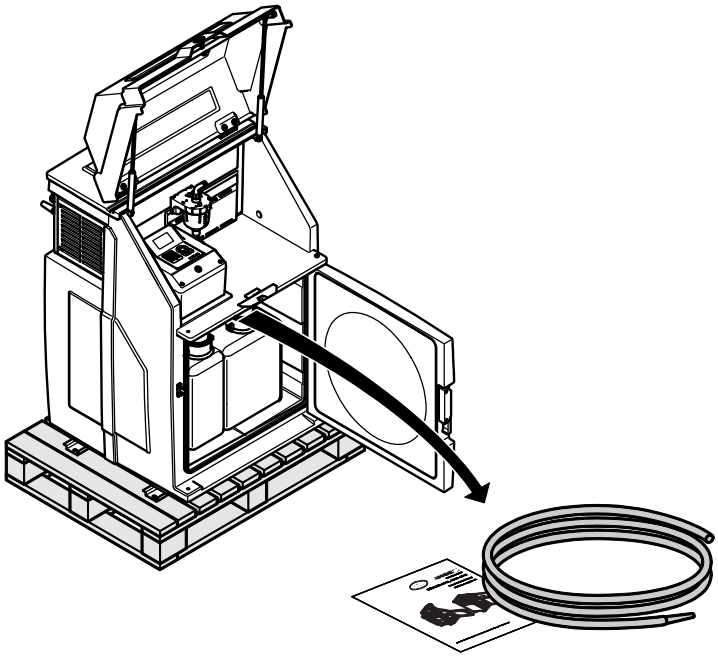


Figure 2 Scope of delivery (SP5 B)

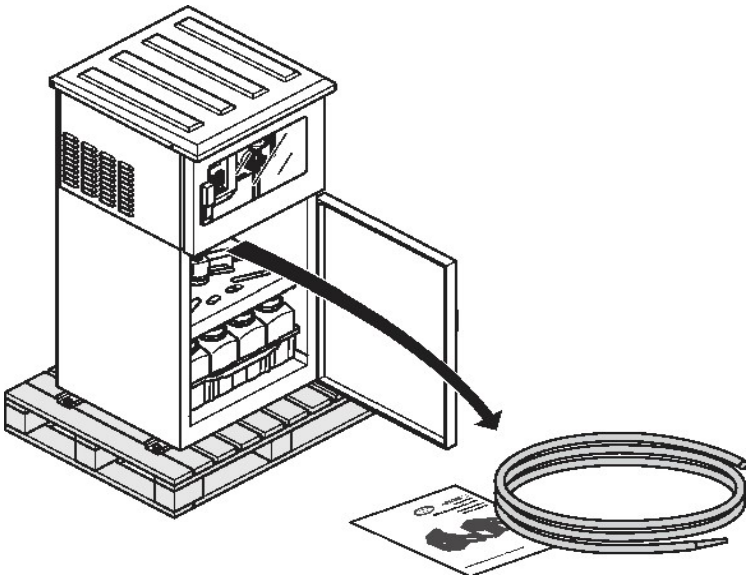


Figure 3 Scope of delivery (SP5 C, SP5 S – SP5 S-MS)

Chapter 3 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. Plugs and sockets are much less well protected against the ingress of liquids and dust. 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).

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

3.1 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 installation with optional accessories, refer to the relevant installation instructions

3.1.1 Required tools

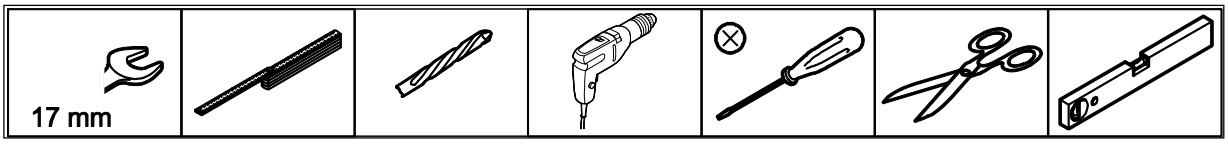
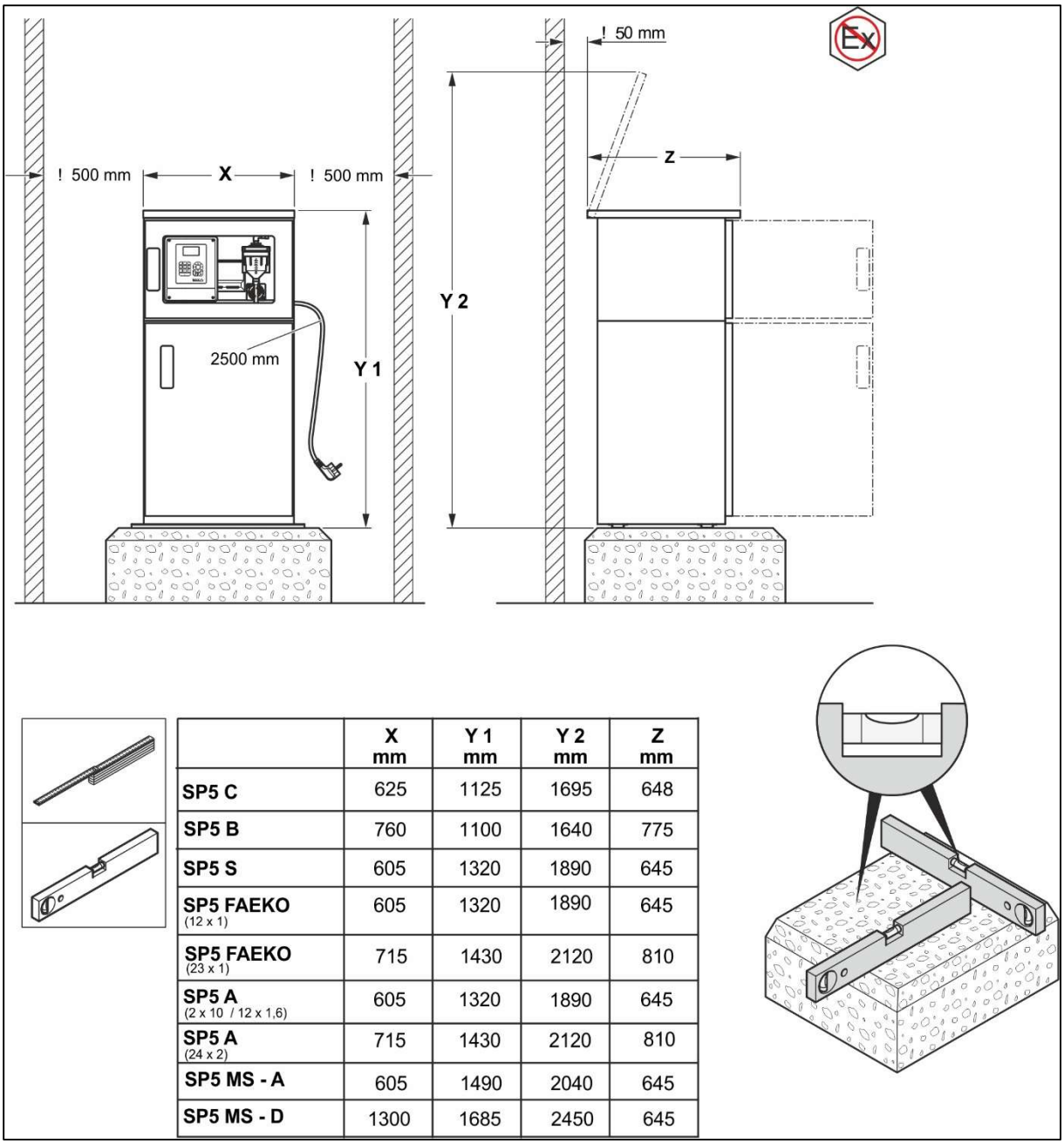


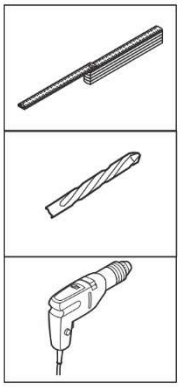
Figure 4 Required tools

3.1.2 Select place of installation



	X mm	Y 1 mm	Y 2 mm	Z mm
SP5 C	625	1125	1695	648
SP5 B	760	1100	1640	775
SP5 S	605	1320	1890	645
SP5 FAEKO (12 x 1)	605	1320	1890	645
SP5 FAEKO (23 x 1)	715	1430	2120	810
SP5 A (2 x 10 / 12 x 1,6)	605	1320	1890	645
SP5 A (24 x 2)	715	1430	2120	810
SP5 MS - A	605	1490	2040	645
SP5 MS - D	1300	1685	2450	645

Figure 5 Select place of installation



	A mm	B mm
SP5 C	660	383
SP5 B	730	383
SP5 S	660	383
SP5 FAEKO	660	383
SP5 A (2 / 12) (Flaschen/bottles)	660	383
SP5 A 24 (Flaschen/bottles)	770	500
SP5 MS Aufsatz / Measuring rack	660	383
SP5 Doppel MS / Double Housing	1250	383

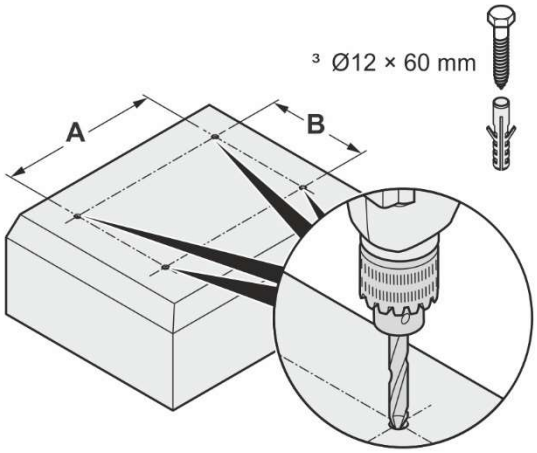


Figure 6 Prepare place of installation

3.1.3 Unpacking

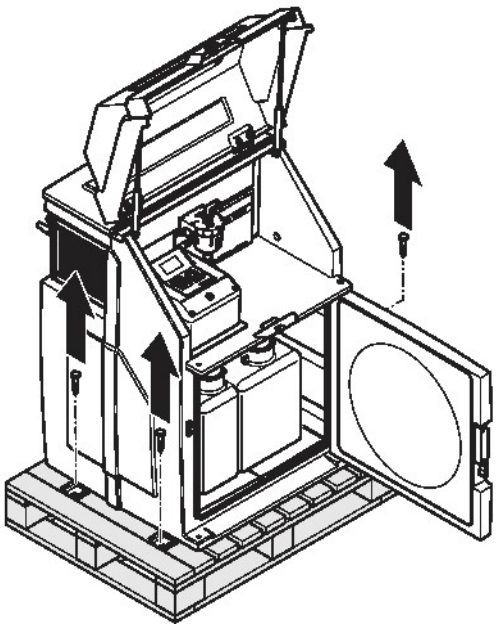


Figure 7 Move the equipment from the transport pallet (SP5 B)

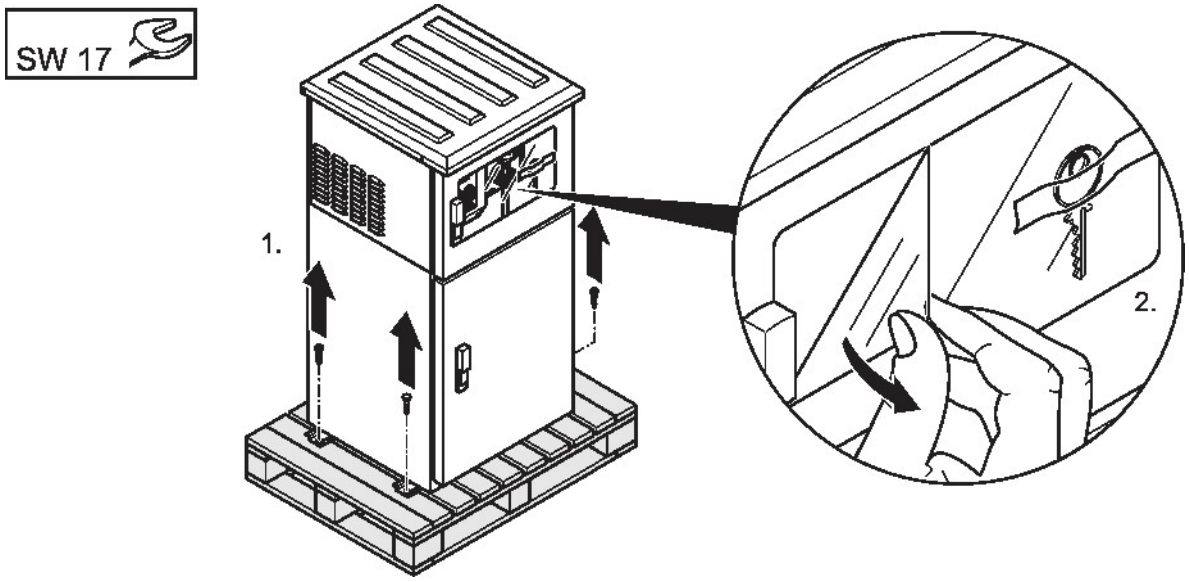


Figure 8 Move the equipment from the transport pallet (SP5 C, SP5 S-SP5 S-MS) (SP5 C is without locks/keys)

3.1.4 Setup

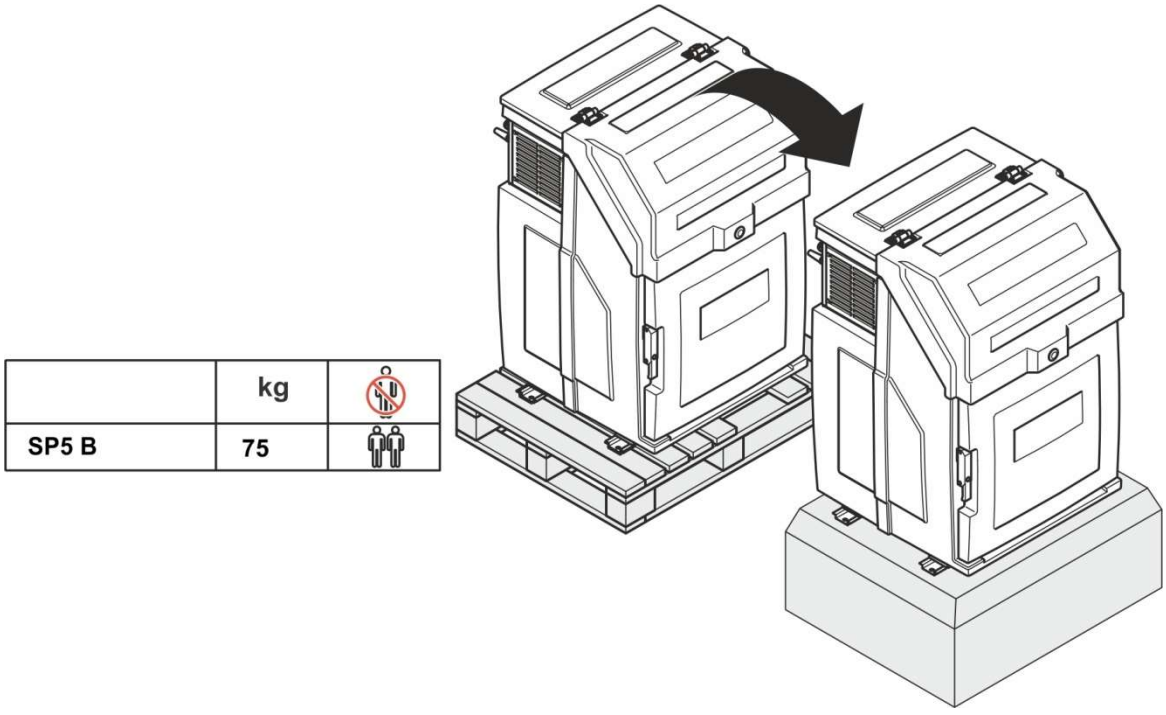


Figure 9 Set up the equipment (SP5 B)

	kg	
SP5 C	82	
SP5 S	100	
SP5 S-F	105	
SP5 S-A	105	
SP5 S-M	115	

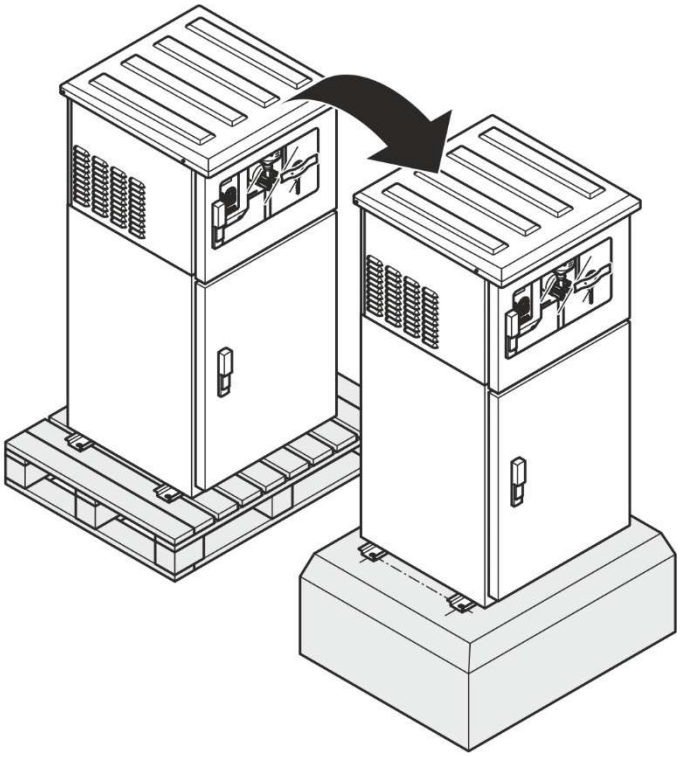


Figure 10 Set up the equipment (SP5 C, SP5 Sxx)

	kg	
SP5 Doppel MS	250	

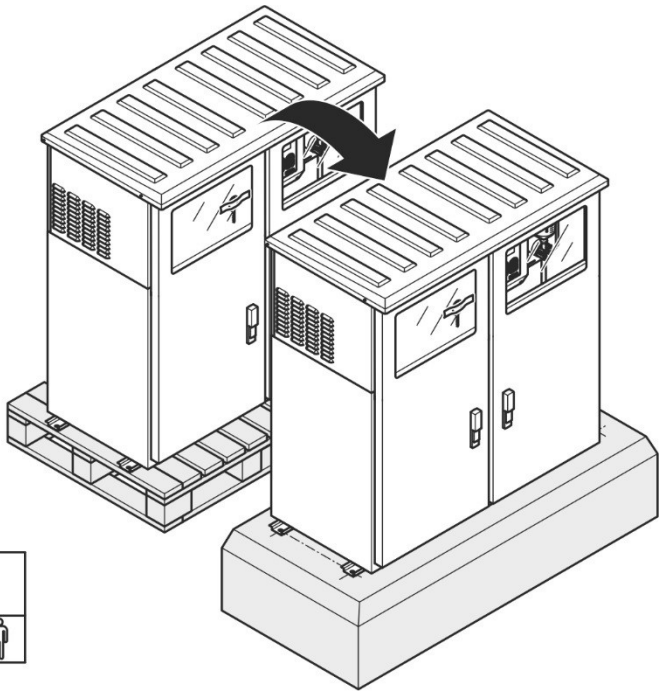


Figure 11 Set up the equipment (SP5 Sxx)

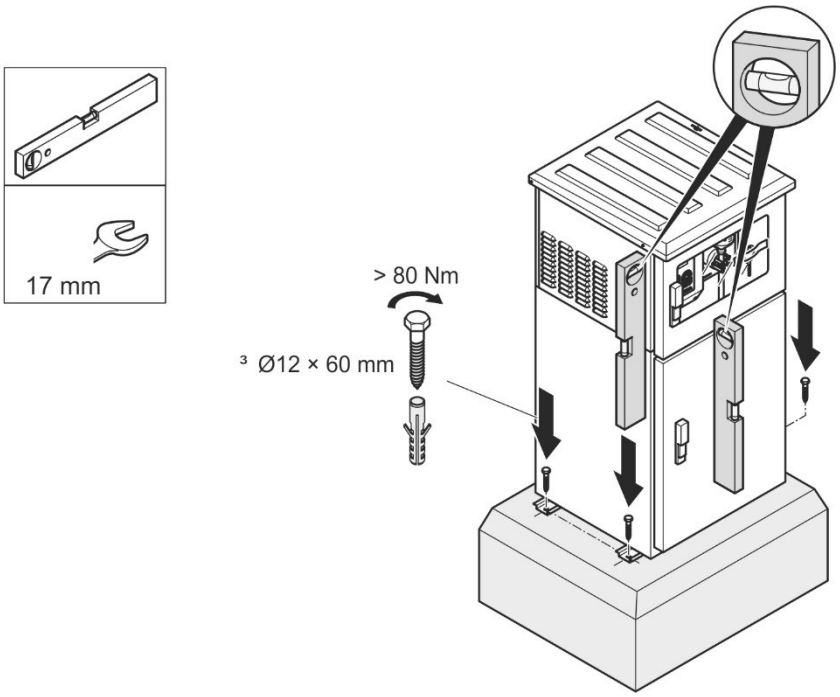


Figure 12 Align and secure the equipment

3.2 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.**

3.2.1 Electrical installation

3.2.1.1 Prepare the electrical installation (SP5 B)

Caution! Before opening the device, the device must be de-energized and thus brought into a safe state.

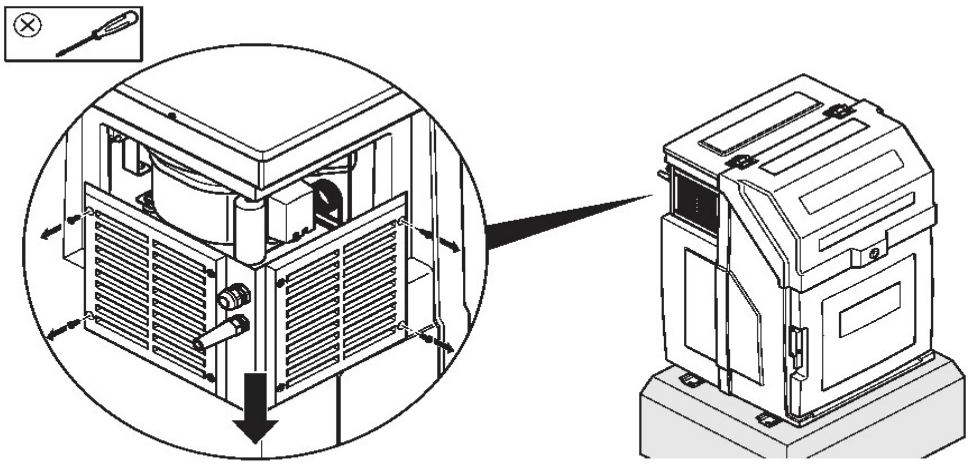


Figure 13 Loosen the screws and remove the cover (SB5 B)

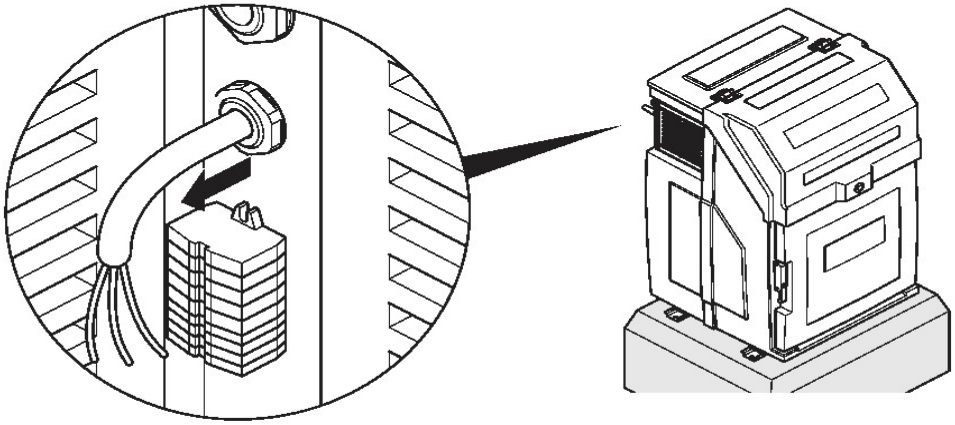


Figure 14 Feed cable through (SP5 B)

3.2.1.2 Prepare electrical installation (SP5 C, SP5 S-SP5 S-MS)

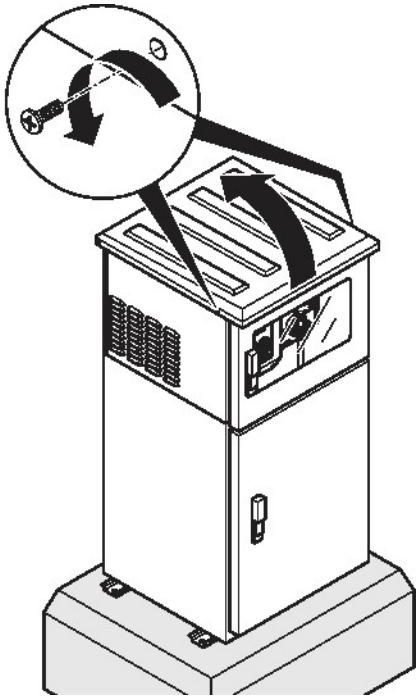


Figure 15 Loosen the lid screws and open the lid (SP5 C, SP5 S-SP5 S-MS)

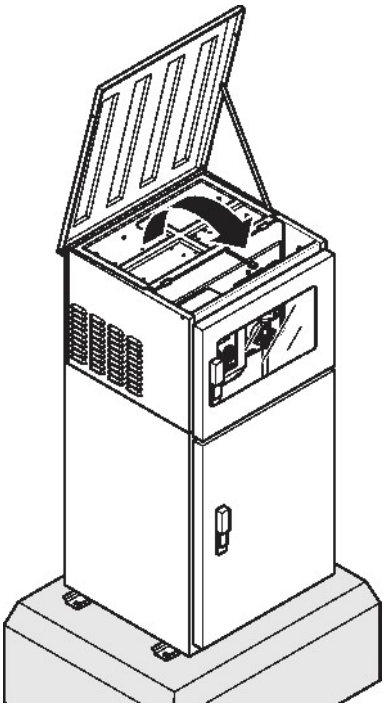


Figure 16 Lift up the cover (SP5 C, SP5 S-SP5 S-MS)

3.2.1.3 Wiring diagram (SP5 B)

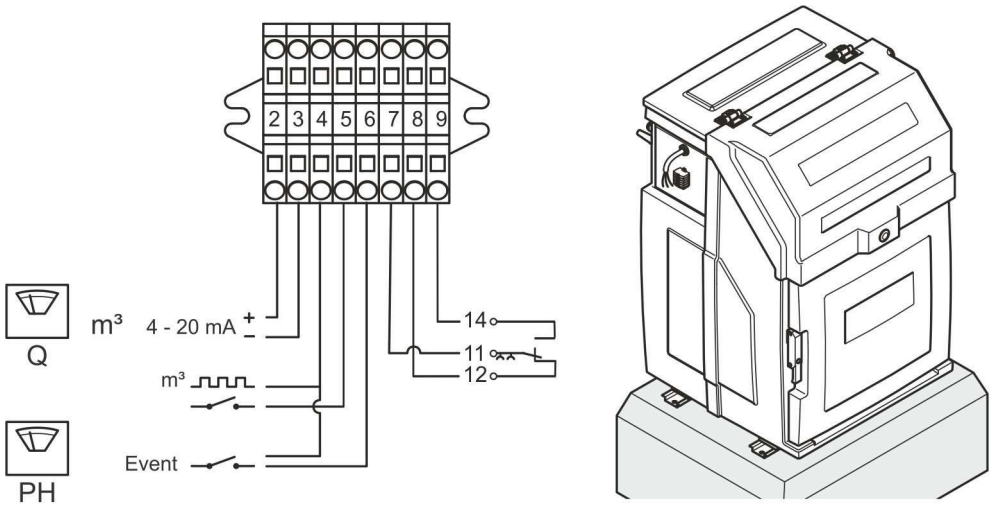


Figure 17 Wiring diagram (SP5 B)

3.2.1.4 Wiring diagram (SP5 C, SP5 S - SP5 S-MS)

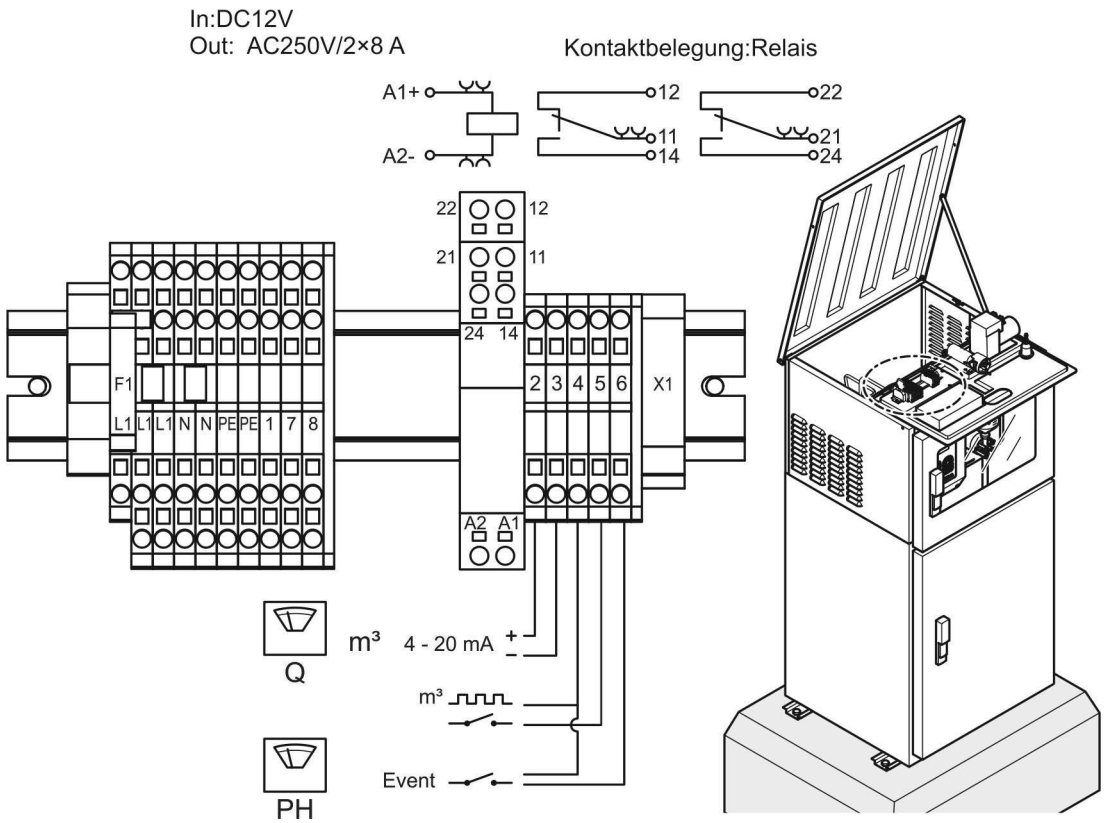


Figure 18 Wiring diagram (SP5 C, SP5 S – SP5 S-MS)

3.2.1.5 Complete the electrical installation (SP5 B)

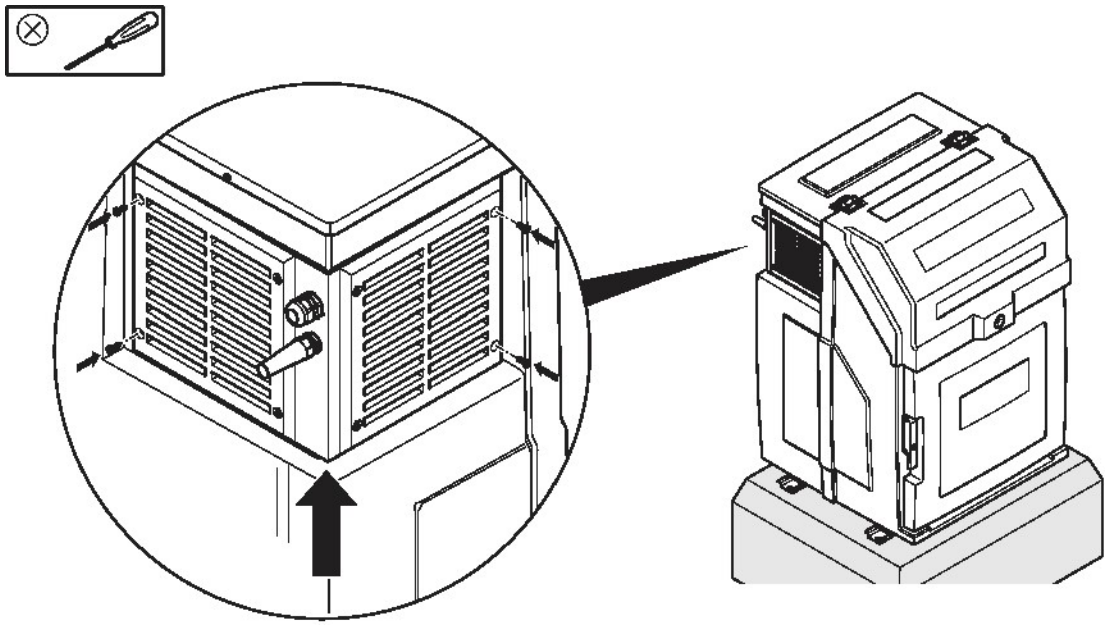


Figure 19 Attach cover

3.2.1.6 Complete the electrical installation (SP5 C, SP5 S-SP5 S-MS)

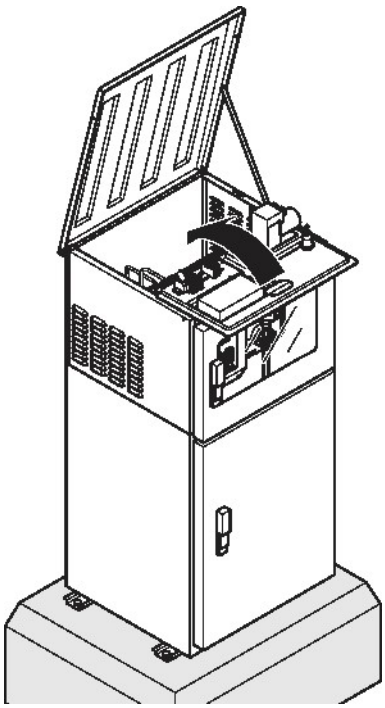


Abbildung 20 Abdeckung zuklappen

If the suction hose is not connected immediately, close the housing lid as described in figure 24, page 22 and figure 25, page 23

3.3 Commissioning of the device

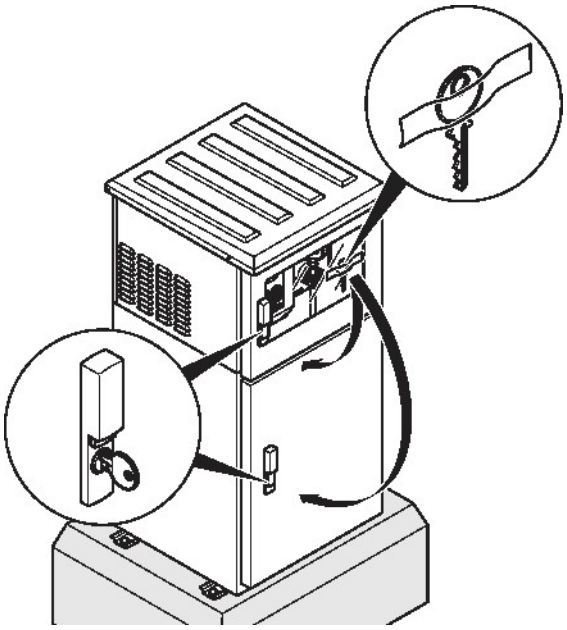


Figure 21 storage location of key (only with choosed option "Key")

3.3.1 Hose connection

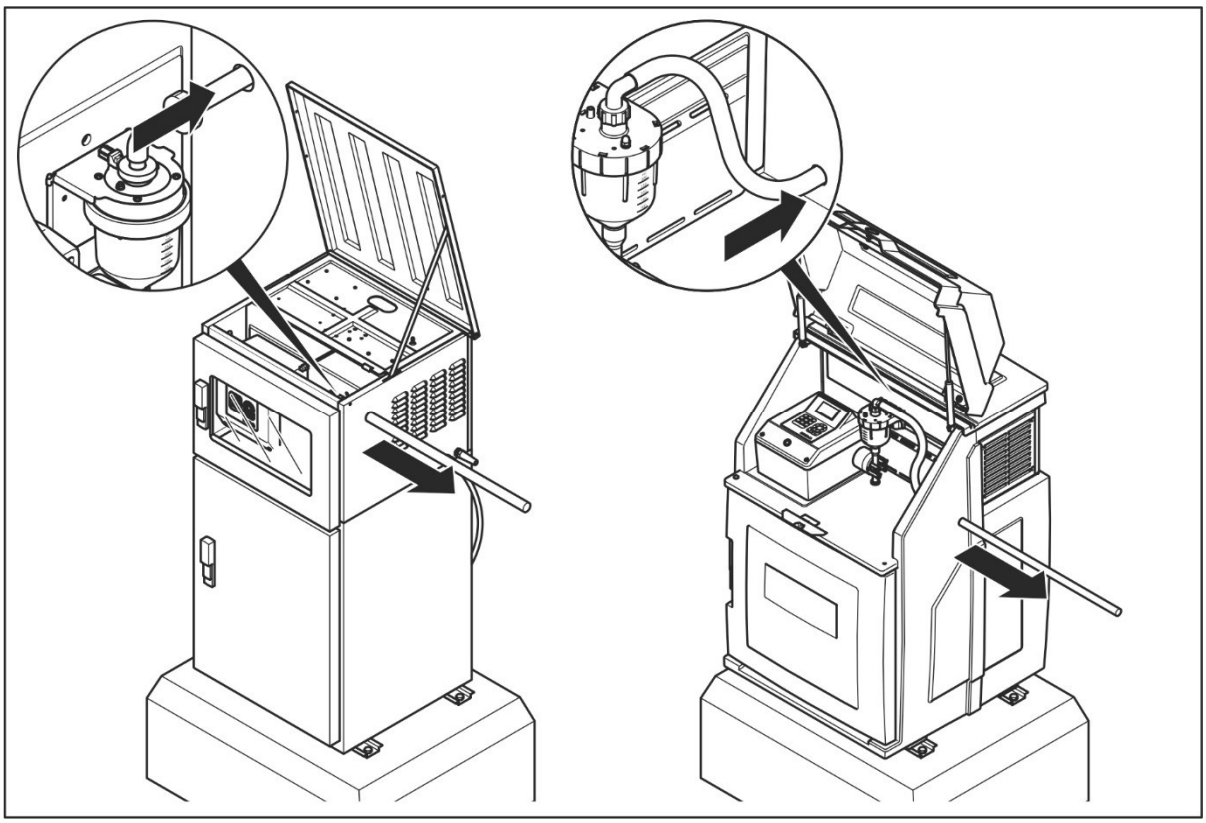


Figure 22 Feed the suction hose through housing opening

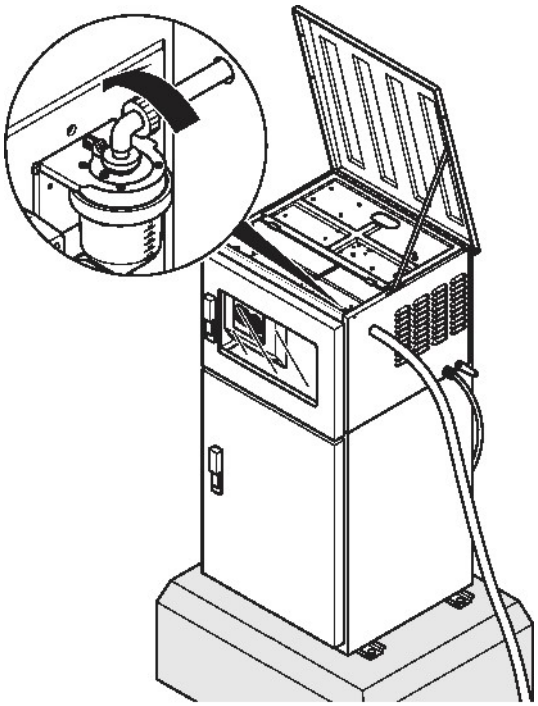


Figure 23 Screw in the union nut

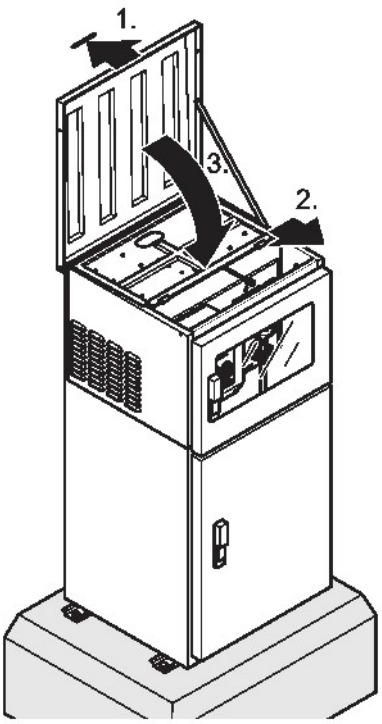


Figure 24 Close the lid

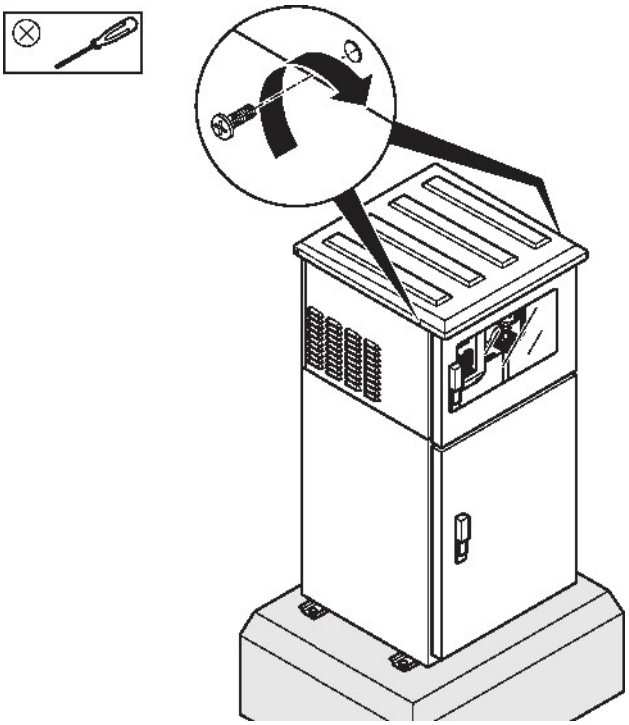


Figure 25 Screw down the lid tightly

Position the hoses in accordance with the following installation diagram.

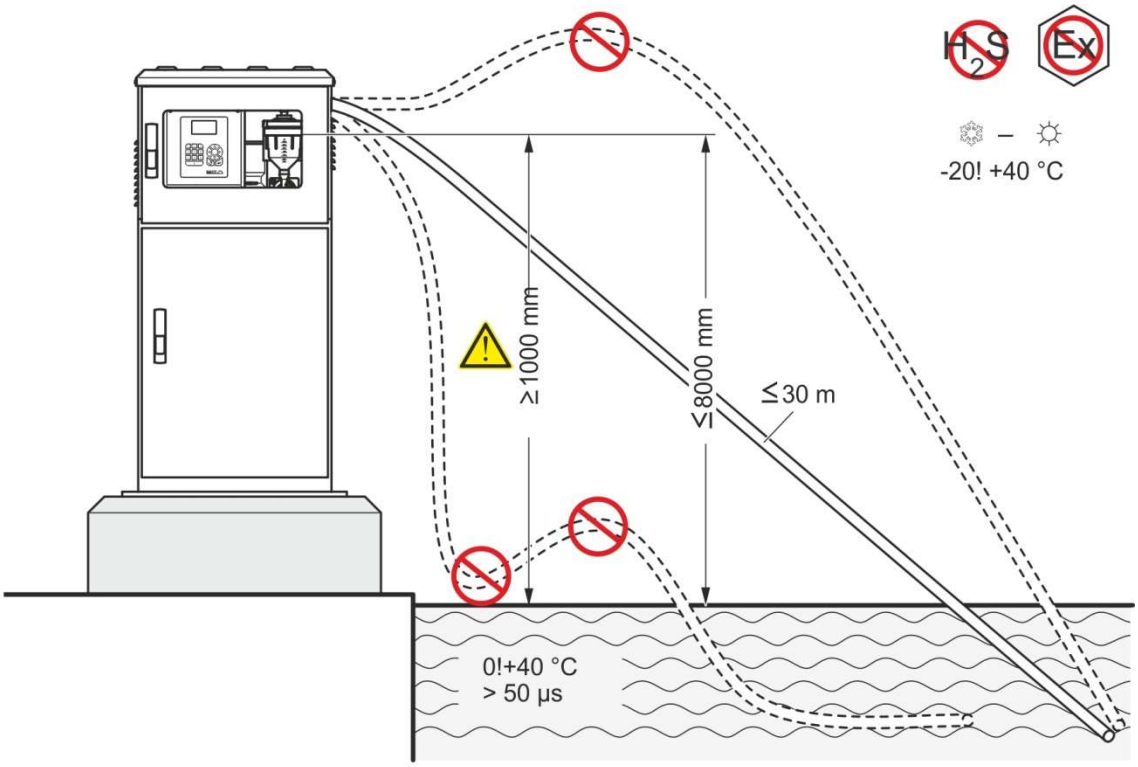


Figure 26 Installation diagram

3.3.2 Set the individual sample volume

3.3.2.1 Plastic dosing vessel

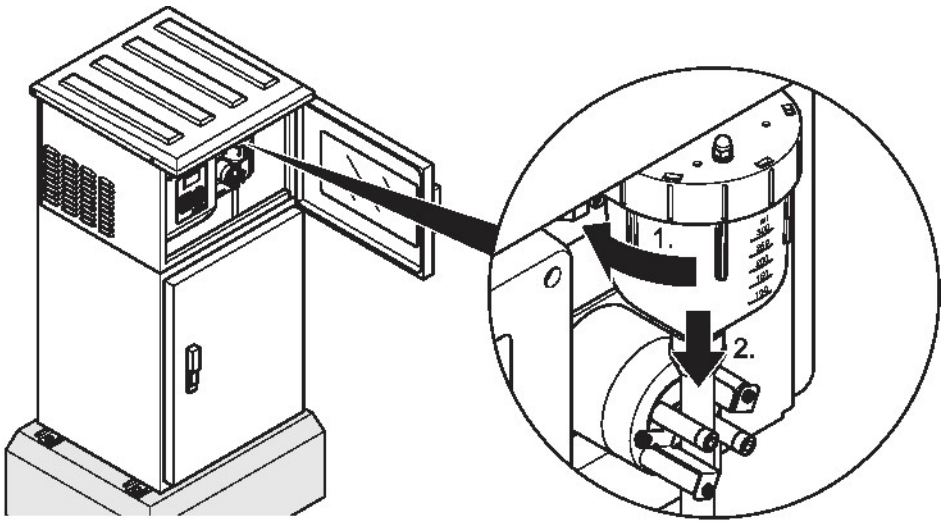


Figure 27 Release the plastic dosing vessel

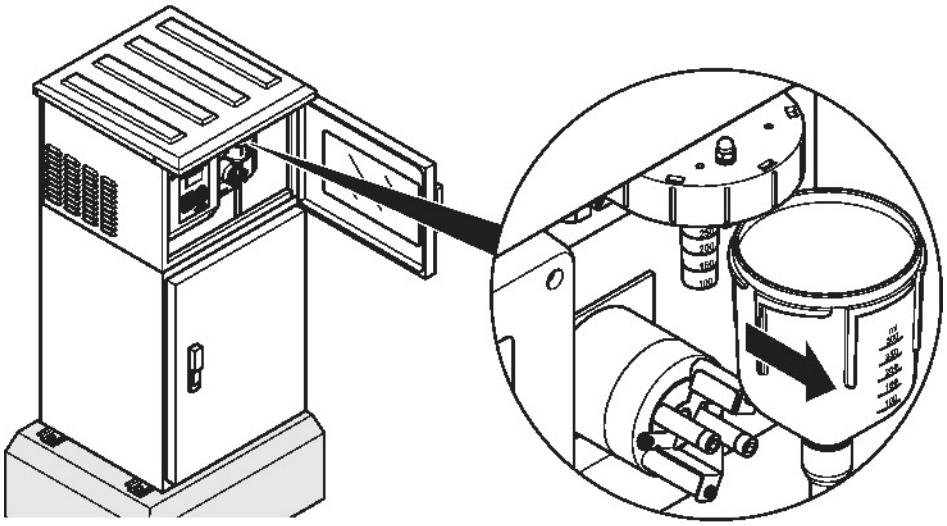


Figure 28 Remove the plastic dosing vessel

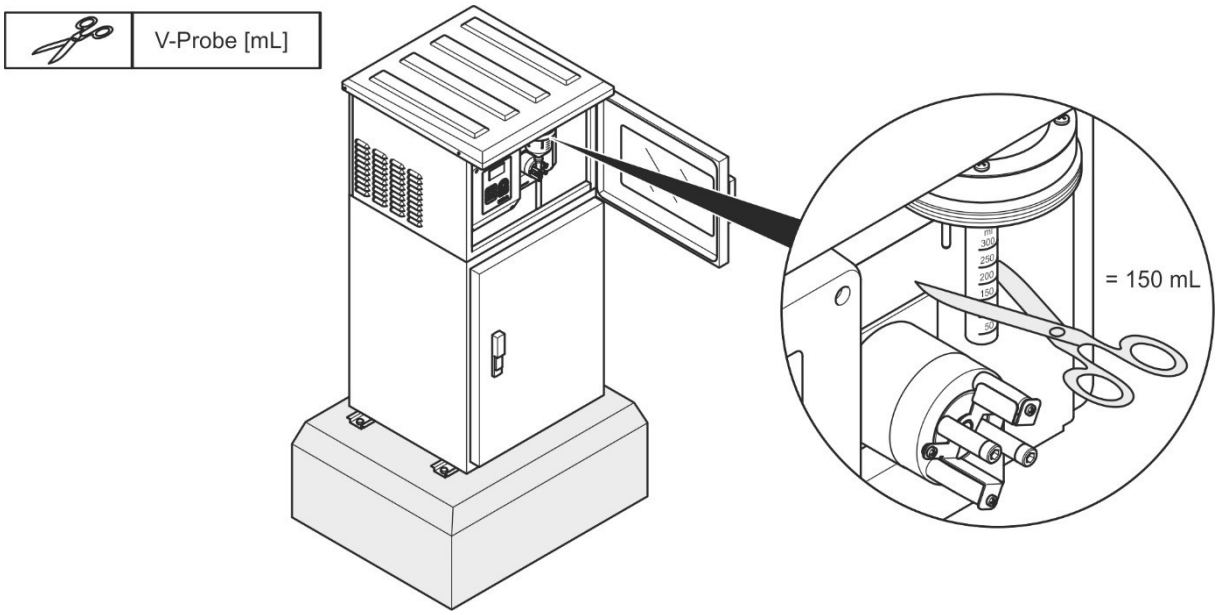


Figure 29 Cut the dosing tube to set the sample volume

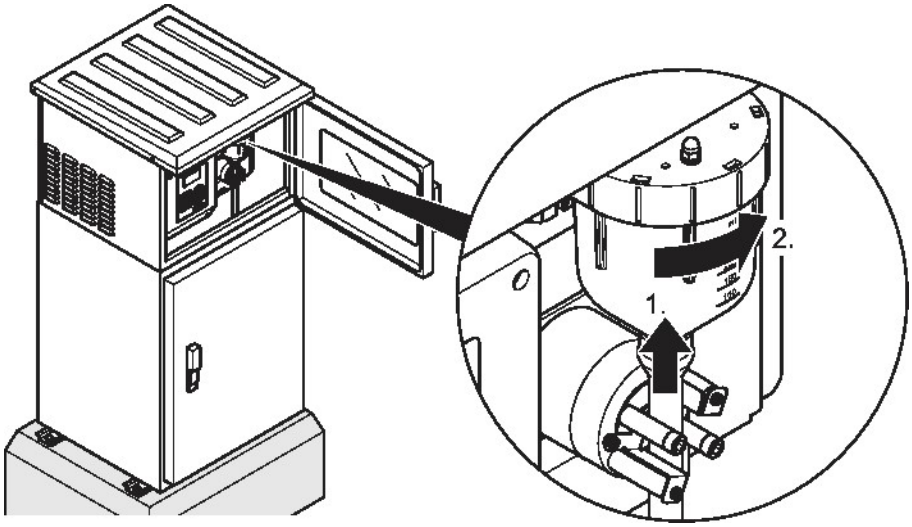


Figure 30 Reinstall the plastic dosing vessel

3.3.2.2. Glass dosing vessel

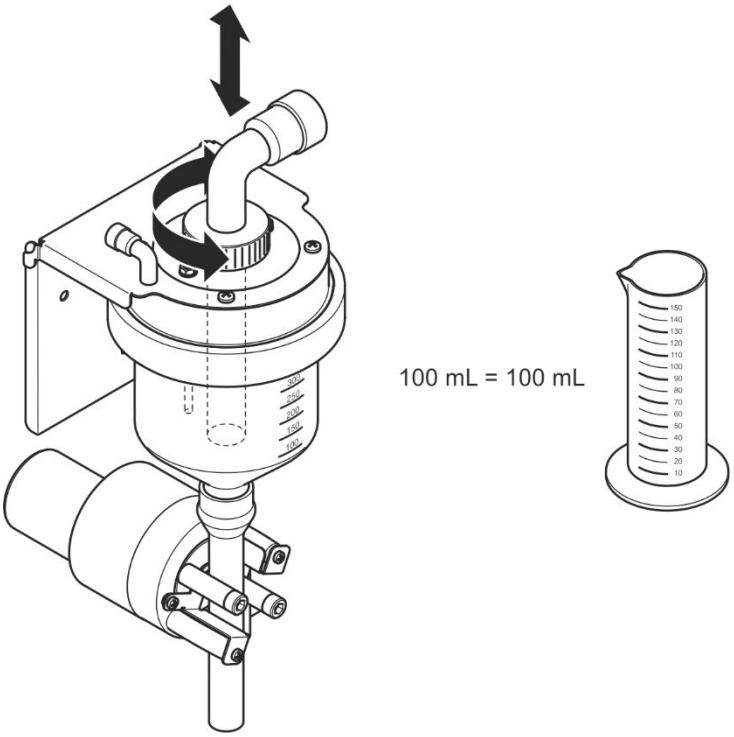


Figure 31 Displace the dosing tube vertically to set the sample volume

3.3.2.3 Dosing vessel for flow-proportional sampling (Not available for SP5 C)

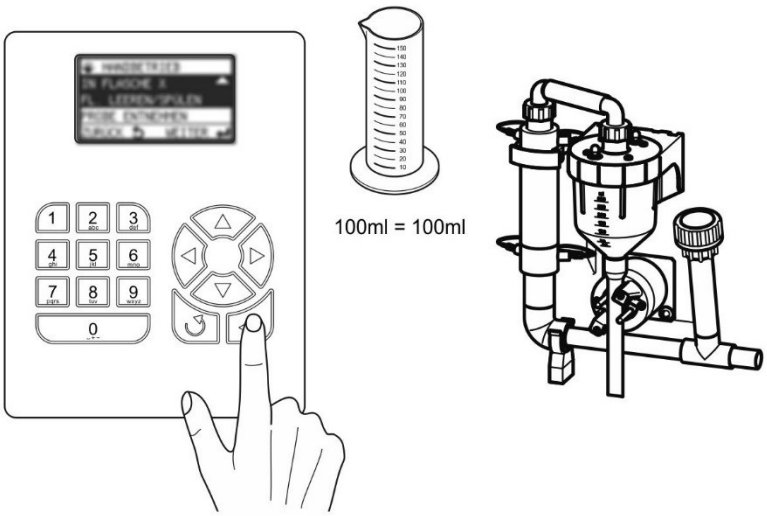


Figure 32 Calibrate the flow-proportional dosing vessel via the System settings menu

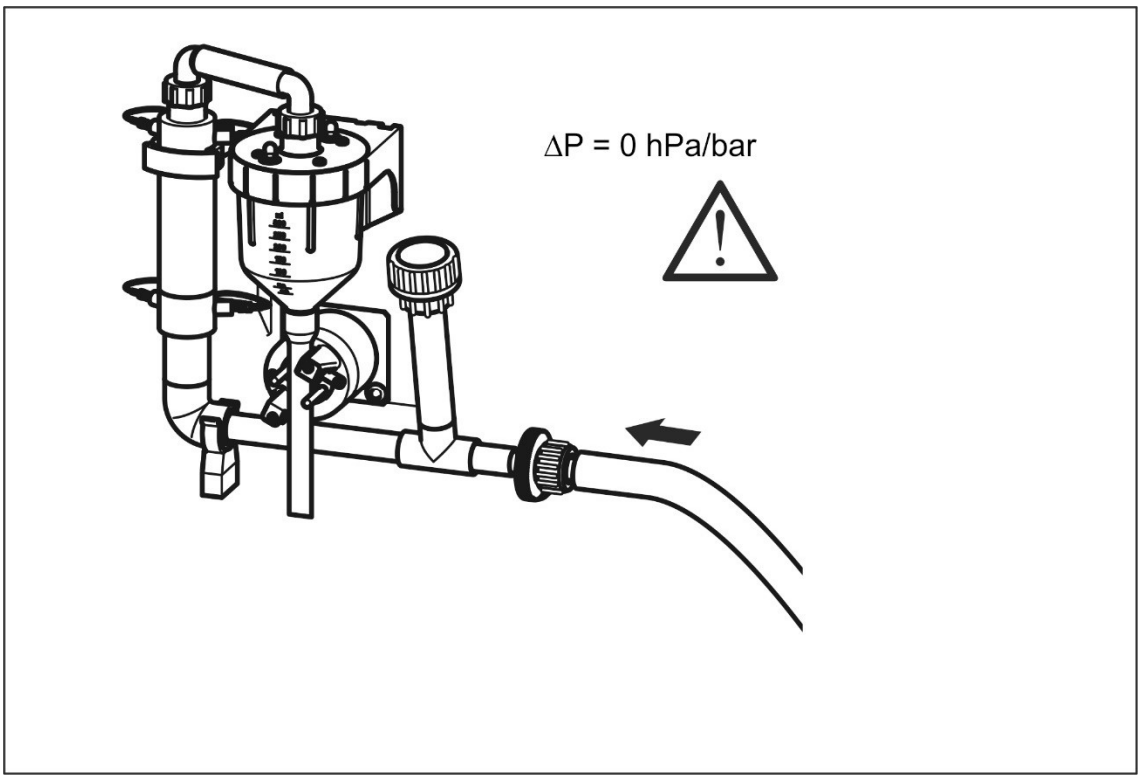


Figure 33 The flow-proportional dosing vessel may only be used if there is NO counter pressure!

3.3.2.4 Bypass-dosing vessel

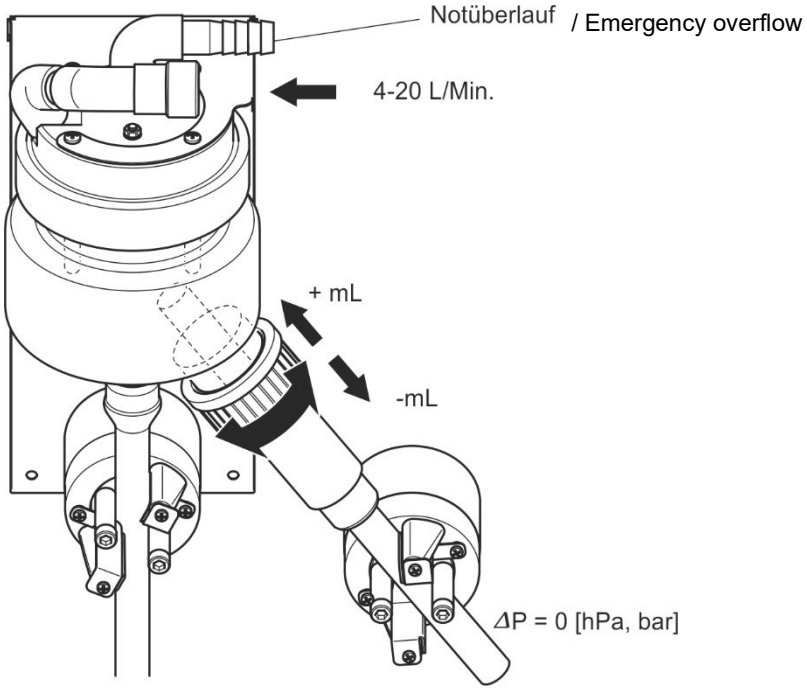
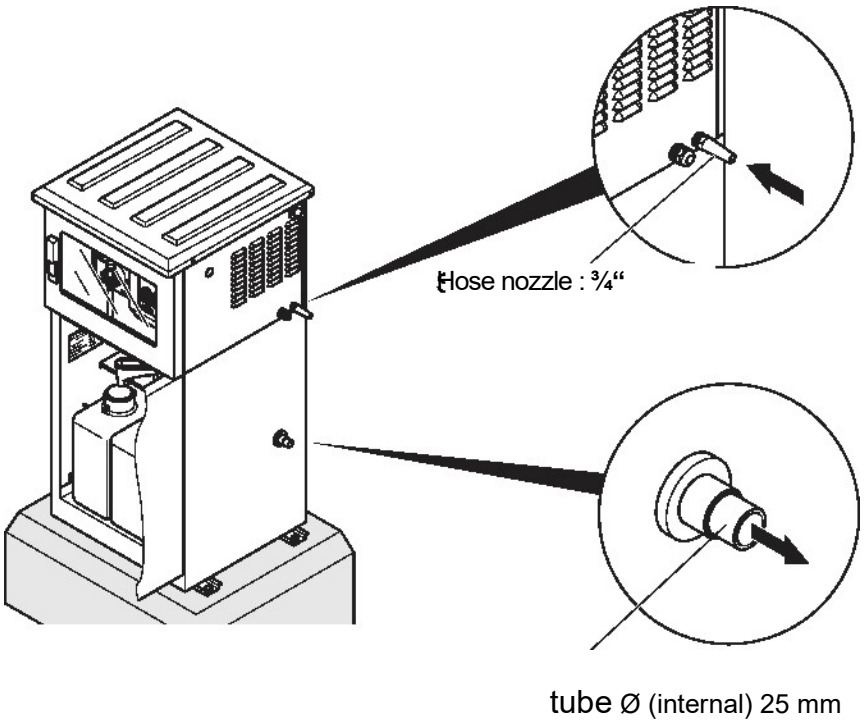


Figure 34 Set the sample volume of the bypass dosing vessel

3.3.2.5 Rinsing water connection and drain (SP5 S-F/SP5 S-A)



Rinsing water connection and drain (SP5 S-F)

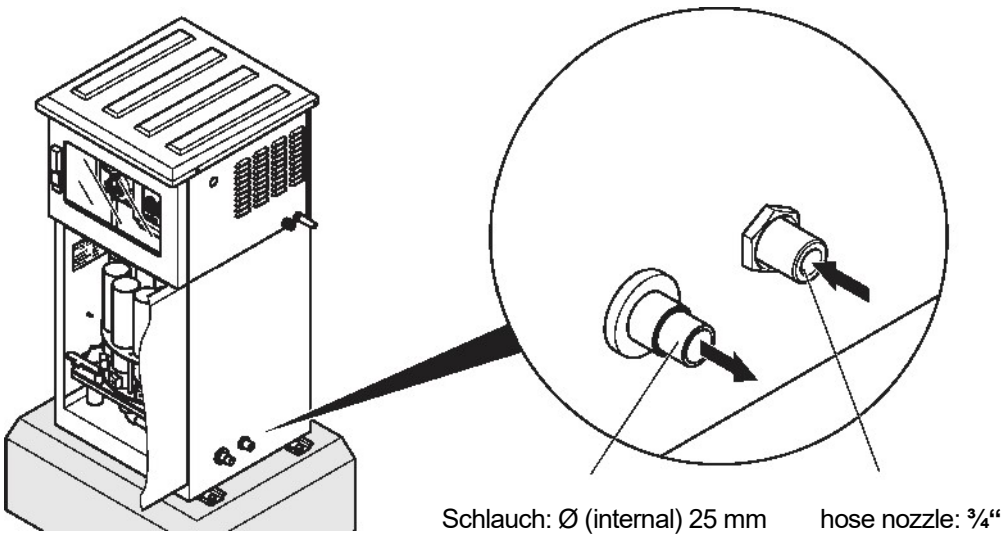


Figure 36 Rinsing water connection and drain (SP5 S-A)

3.3.2.6 Water circuit diagram (SP5 S-MS)

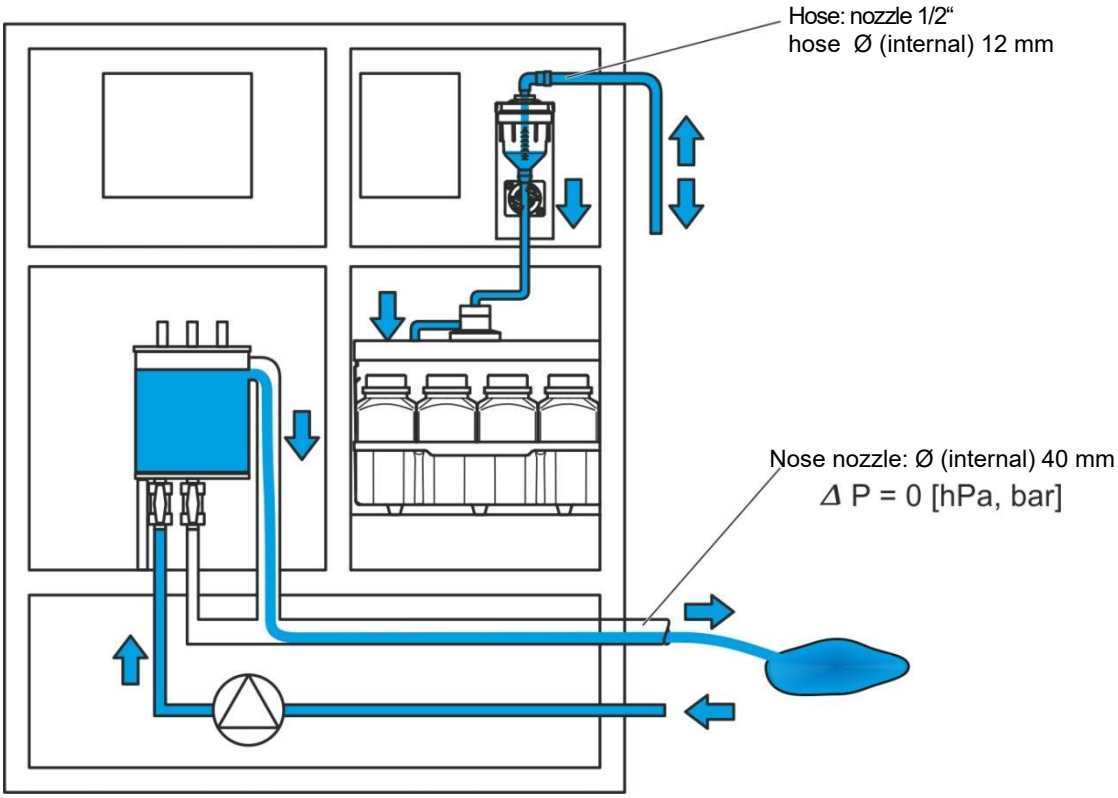


Abbildung Figure 37 Water circuit diagram (SP5 S-MS)

3.3.3 Preparing sample containers (SP5 B, SP5 C, SP5 S, SP5 S-M, SP5 S-F, SP5 S-MS)

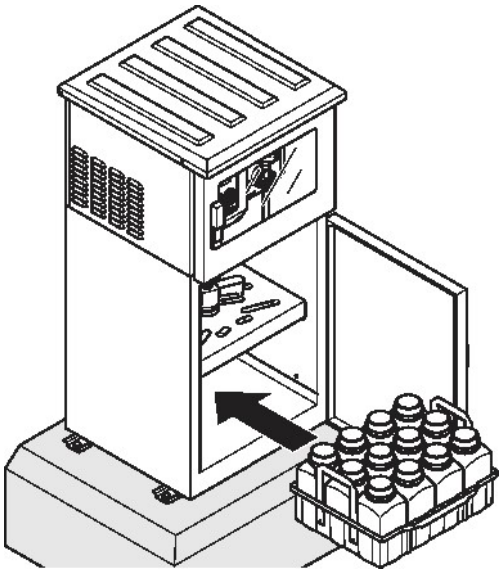


Figure 38 Put the empty bottles in the housing

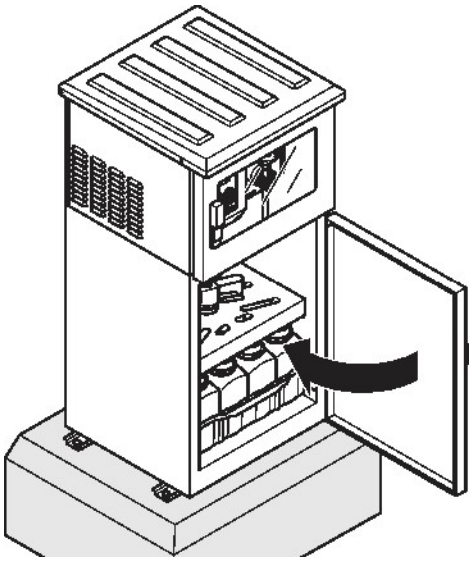


Abbildung Figure 39 Close the door

3.3.4 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.

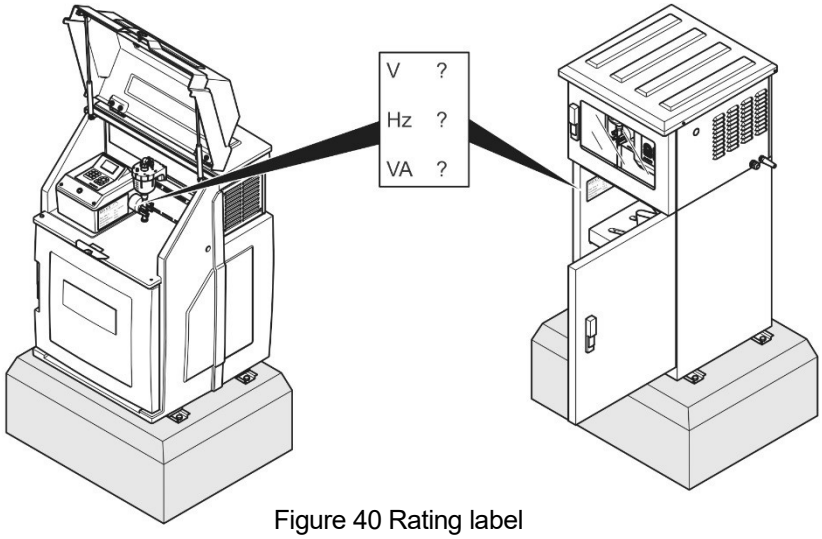


Figure 40 Rating label

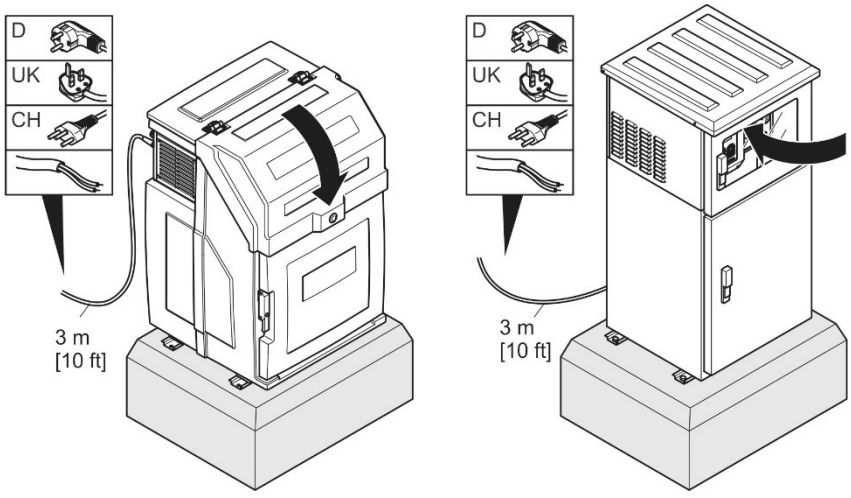


Figure 41 Possible connection configurations

Chapter 4 Operation

4.1 Control unit operation

All the equipment functions are software-controlled.

4.1.1 Programming

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

4.1.1.1 Keyboard layout/function

The equipment is programmed by the operator.

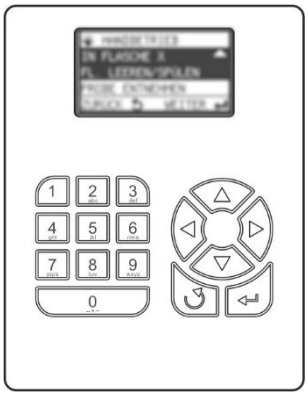


Figure 42 Control panel

Table 1 Key functions

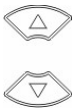
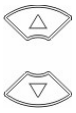
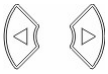
Display help text (in the case of selection fields, the cursor must be placed on the left-hand side	Arrow key	
Move from one menu item to the next menu selection	Arrow keys	
Select the desired menu	Enter key	
Move within a menu	Arrow keys	
Selection within the menu	Arrow keys	
Confirm the selection (automatically marked with a ✓)	Enter key	

Tabelle Table 1 Key functions (continued)

Enter/change values	Arrow keys	
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	
Wakeup sleepmode (press 5 sec. at least) (only for portables)	Back- key or ENT key	
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. Press the arrow key, to move the cursor to the desired position.
2. Press the Enter Key to execute the desired function.

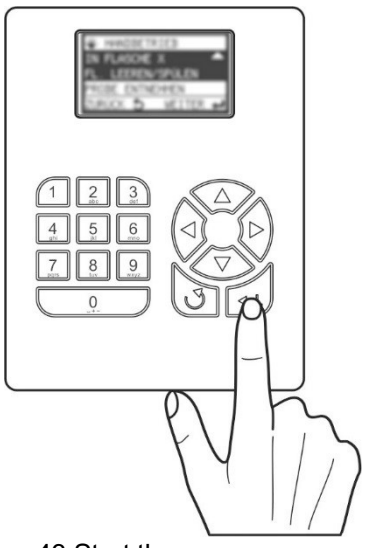


Figure 43 Start the program

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 menue

4.2 Normal operation

The described normal operation applies to several models (e. g. SP5 B, SP5 C, SP5 S, SP5 S-M, SP5 S-F, SP5 S-A). The SP5 B, SP5 S and SP5 S-A models are displayed as examples in the figures.

4.2.1 Replace the sample bottles (SP5 B, SP5 C, SP5 S, SP5 S-M, SP5 S-F)

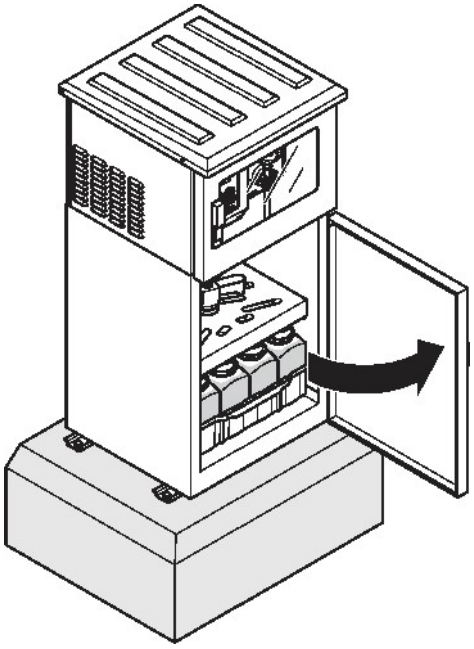


Figure 44 Open the door

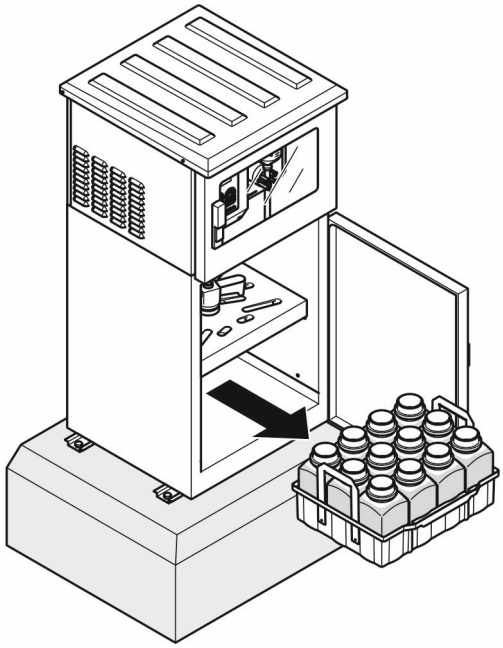


Figure 45 Remove full bottles

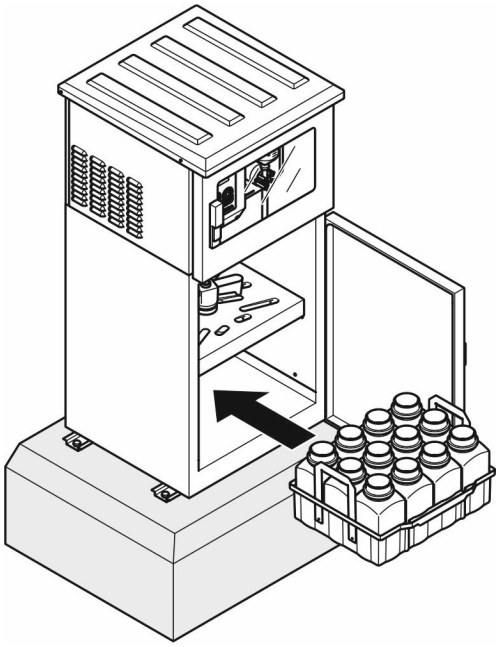


Figure 46 Replace with empty bottles

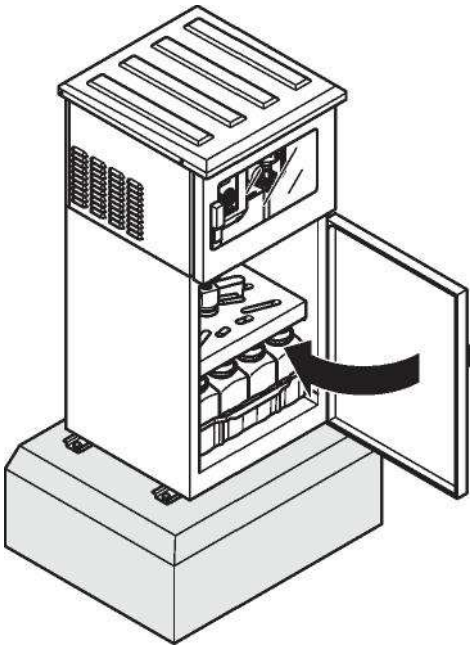


Figure 47 Close the door

4.2.2 Sampling (SP5 S-A with 12 or 24 bottles)

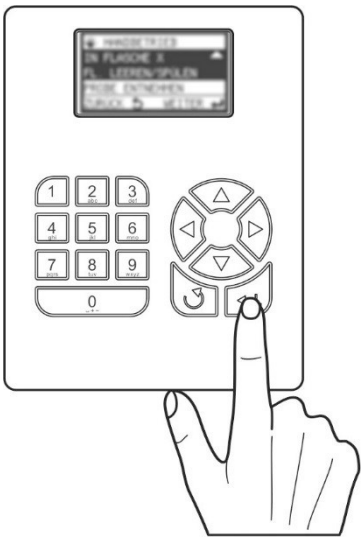


Figure 48 Go to “Manual Mode” during the running program (SP5 S-A with 12 or 24 bottles)

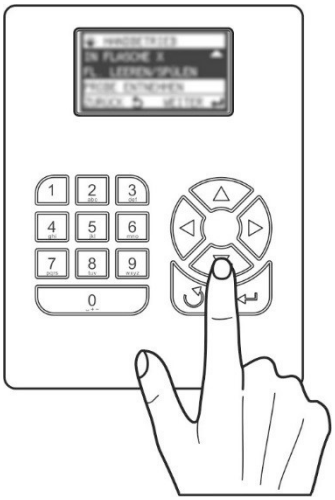


Figure 49 Select „Empty bottles/Rinse“ (SP5 S-A with 12 or 24 bottles)

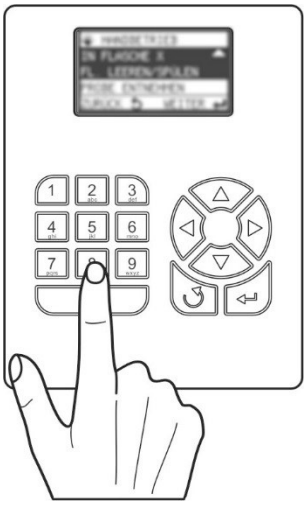


Figure 50 Options to Empty/Rinse bottles

Select one of the options

- All bottles
- Present BTL
- Empty/Rinse BTL x

(SP5 S-A with 12 or 24 bottles)

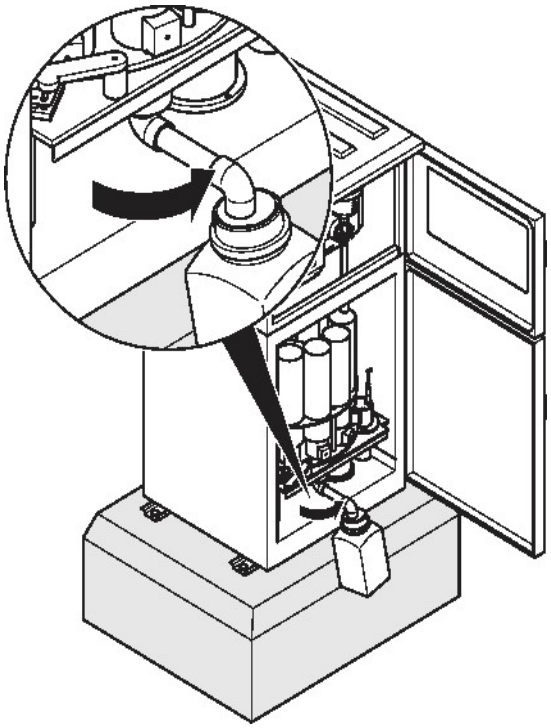


Figure 51 Swivel out the sample faucet (SP5 S-A with 12 or 24 bottles)

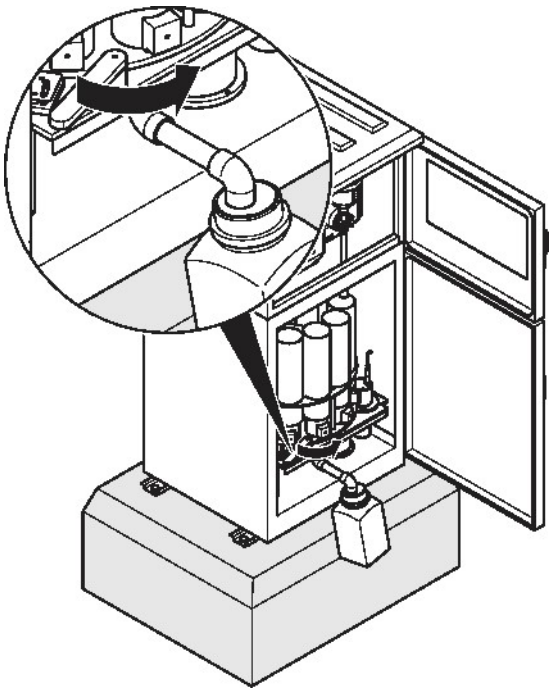


Figure 52 Press the lever to open the sample faucet (SP5 S-A with 12 or 24 bottles)

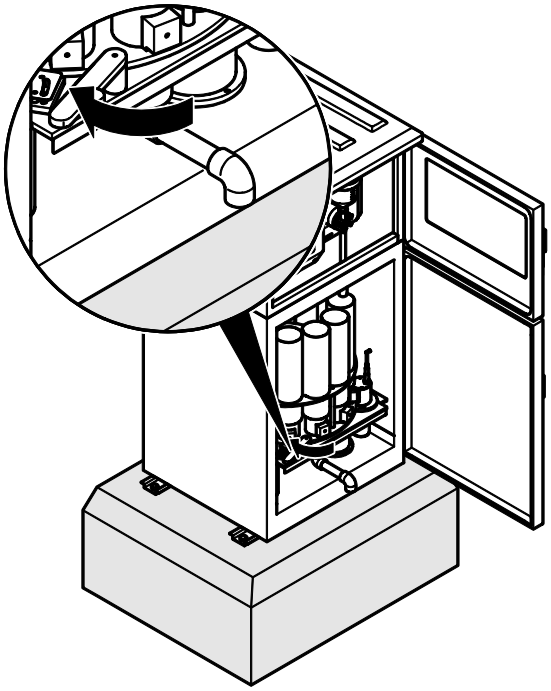


Figure 53 Swivel the lever back to close the sample faucet (SP5 S-A with 12 or 24 bottles)

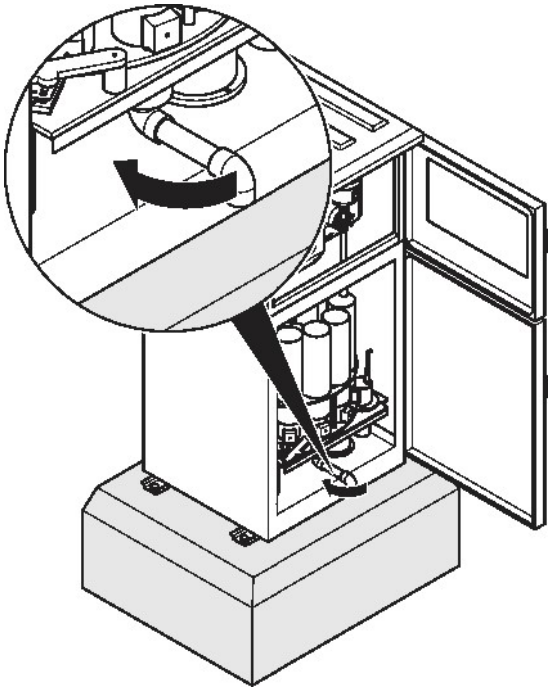


Figure 54 Swivel in the sample faucet (SP5 S-A with 12 or 24 bottles)

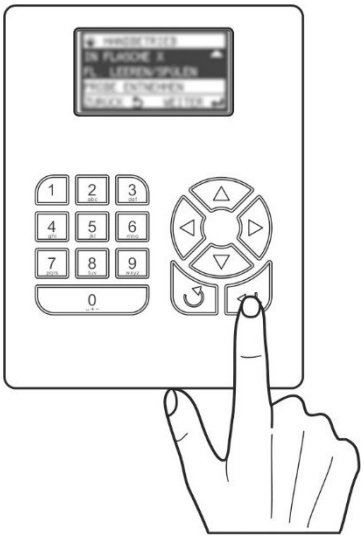


Figure 55 in Menue „EMPTY/RINSE BTL“ Press **ESC-key**, to finish. (SP5 S-A with 12 or 24 bottles)

4.2.3 Sampling (SP5 S-A with 2 or 4 bottles)

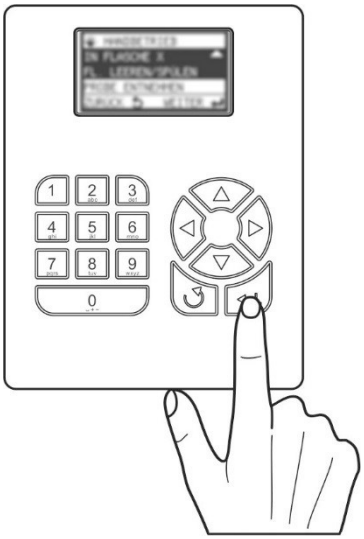


Figure 56 Select “Pause” (SP5 S-A with 2 or 4 bottles)

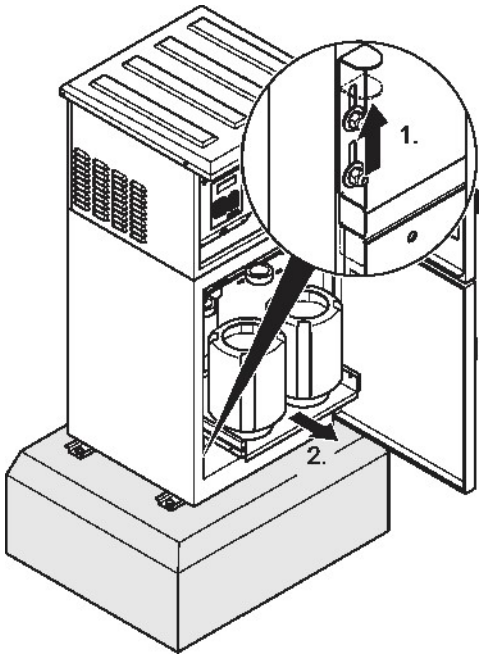


Figure 57 Release the bottle holder (SP5 S-A with 2 or 4 bottles)

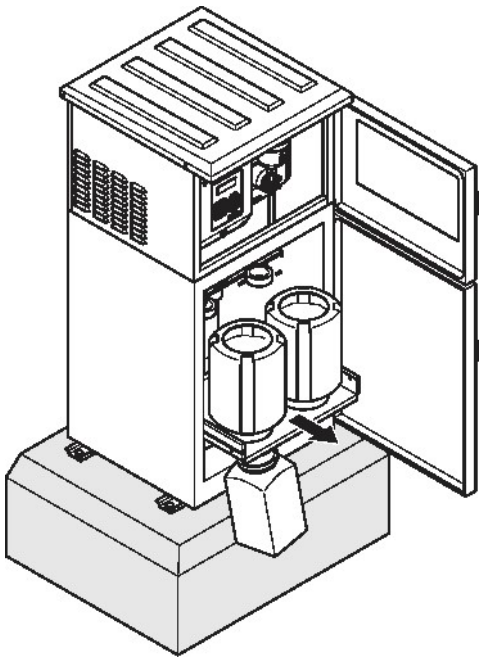


Figure 58 Pull out the bottle holder and take out sample (SP5 S-A with 2 or 4 bottles)

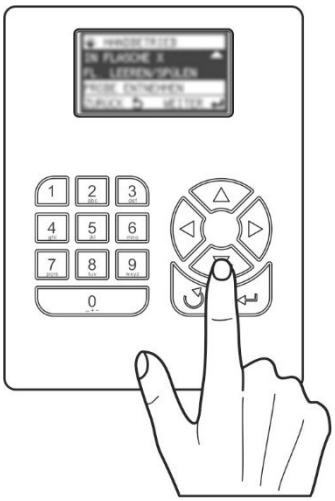


Figure 59 Select “Take out sample” (SP5 S-A with 2 or 4 bottles)

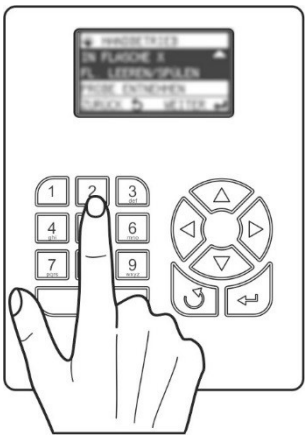


Figure 60 Swivel- Select the bottle number (1,2,3 ….) (SP5 S-A with 2 or 4 bottles)

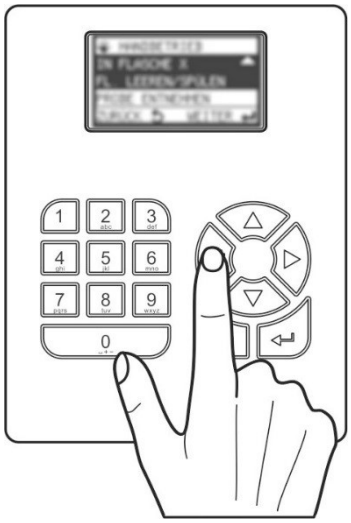


Figure 60a) Swivel (x) select **OPEN** (SP5 S-A with 2 or 4 bottles)

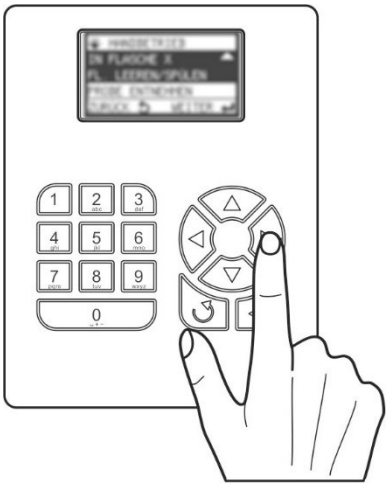


Figure 60b) Swivel (x) Select CLOSE (SP5 S-A with 2 or 4 bottles)

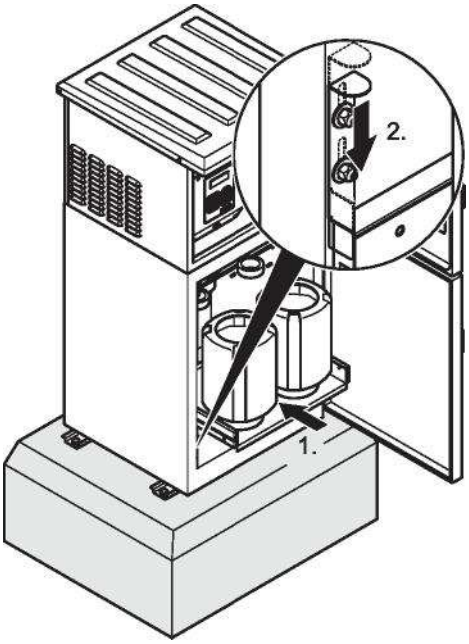


Figure 61 Push the bottle holder back in and secure (SP5 S-A with 2 or 4 bottles)

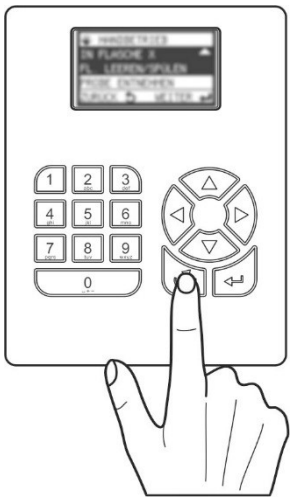


Figure 62 EXIT Menue, Press 2x ESC (SP5 S-A with 2 or 4 bottles)

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

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

5.2 Cleaning

5.2.1 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.

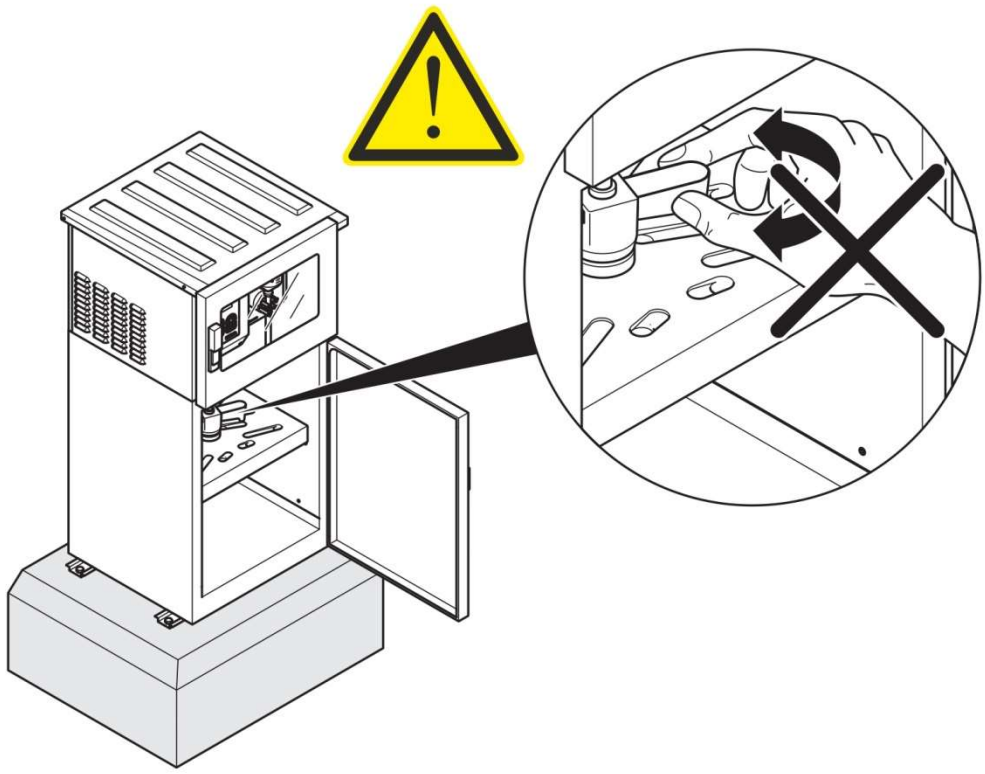


Figure 63 NEVER rotate the distributor unit manually

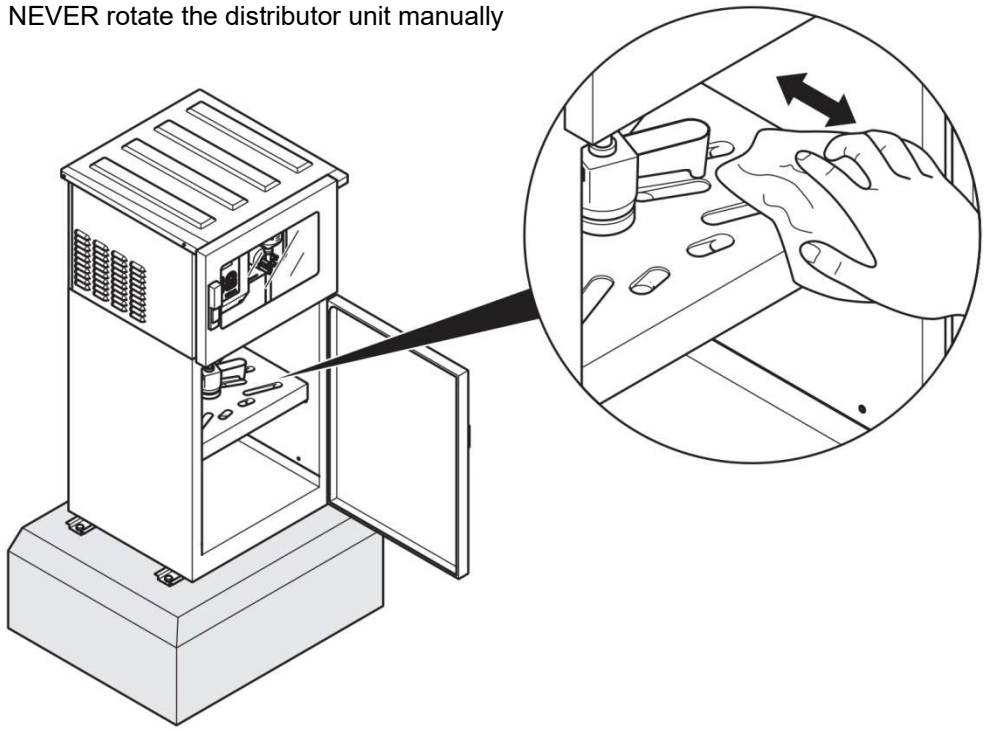


Figure 64 Clean the distributor unit

5.2.2 Clean the dosing vessel

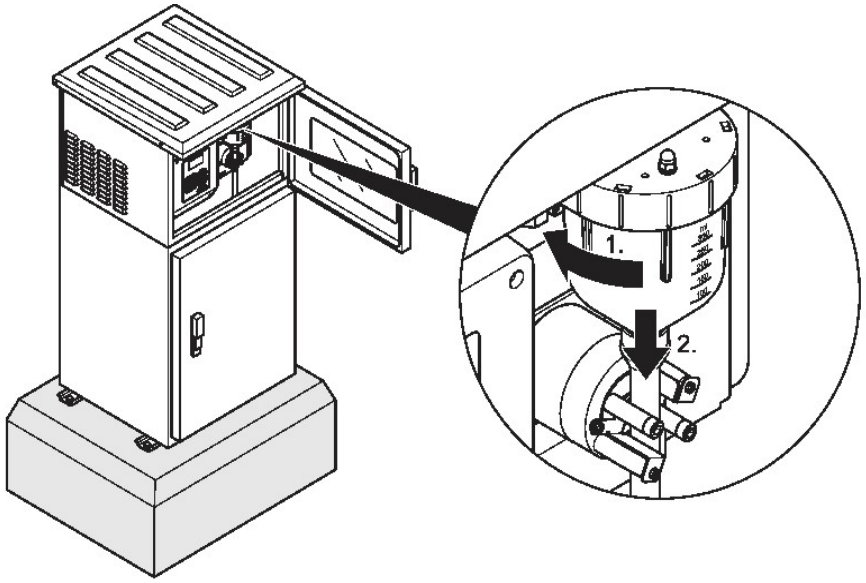


Figure 65 Release the dosing vessel

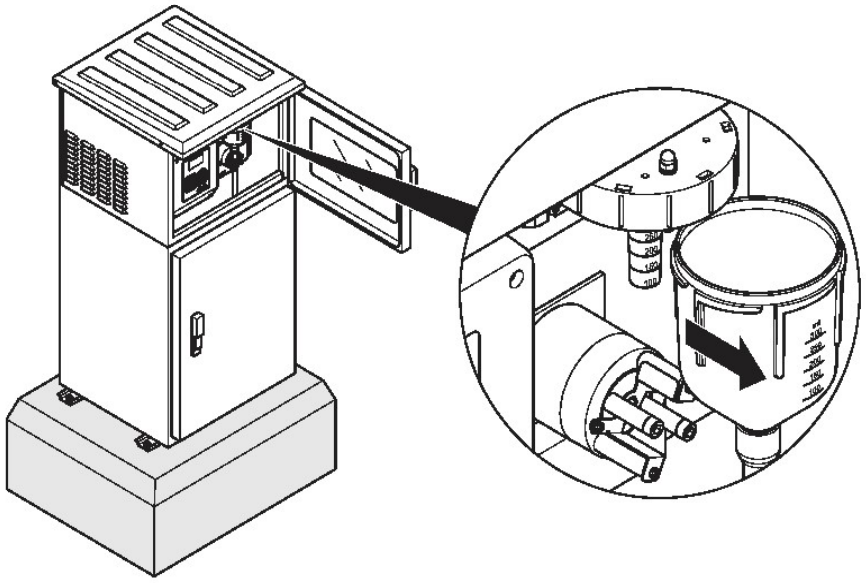


Figure 66 Remove the dosing vessel

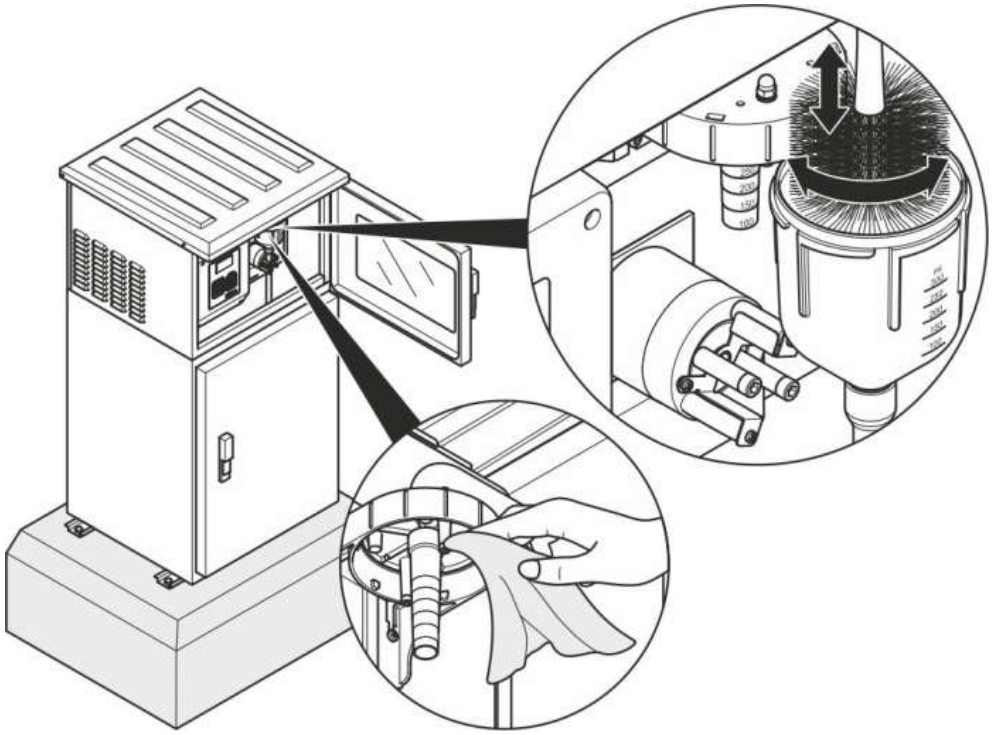


Figure 67 Clean the dosing vessel

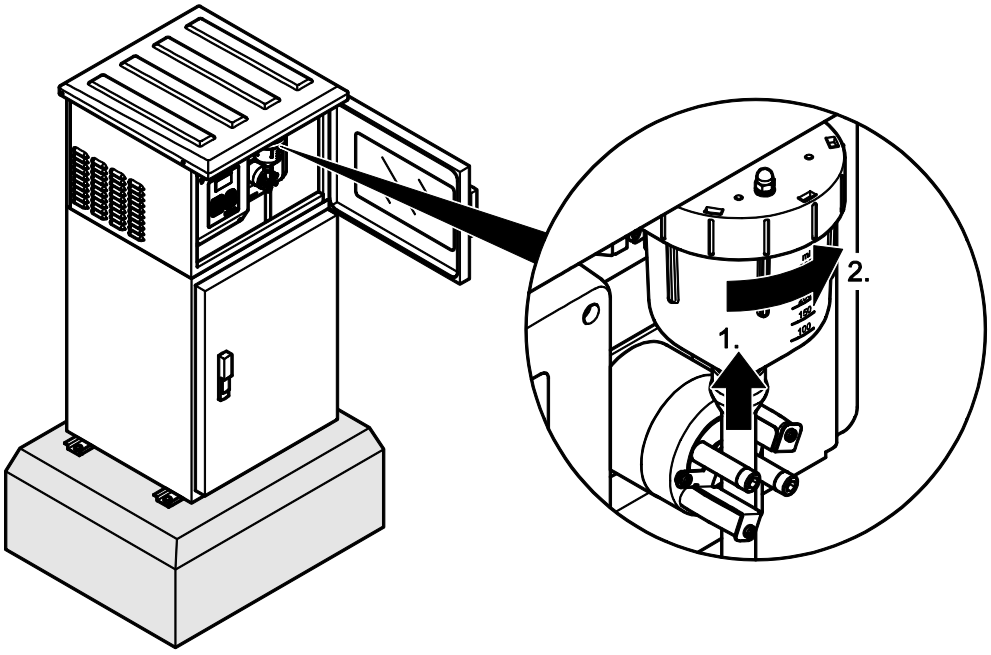
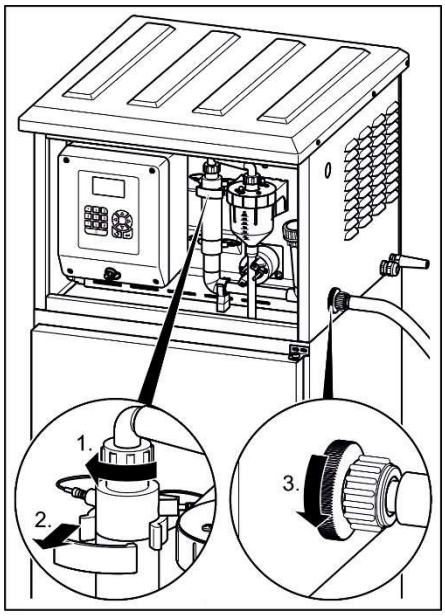
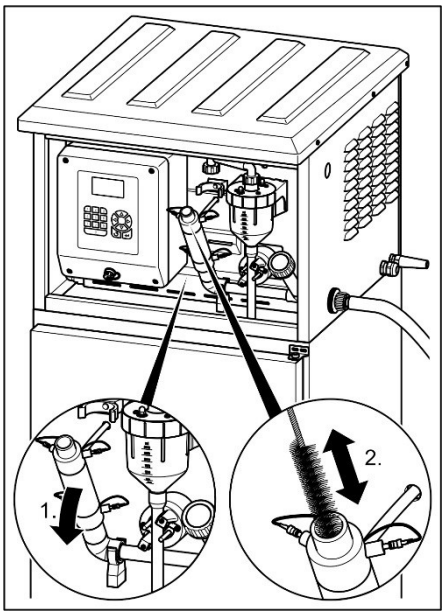


Figure 68 Install the dosing vessel

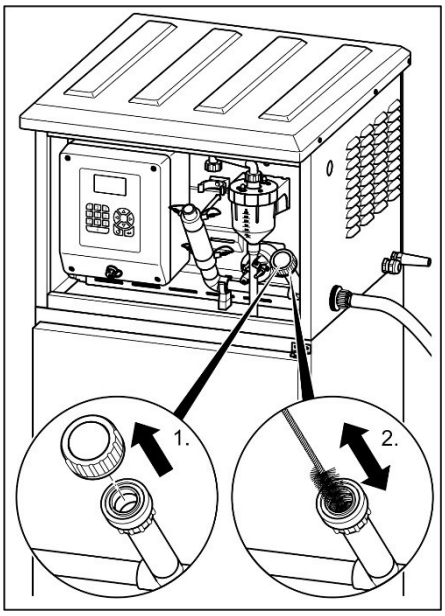
5.2.2.1 Cleaning measuringtube (flow-proportional dosing-system)



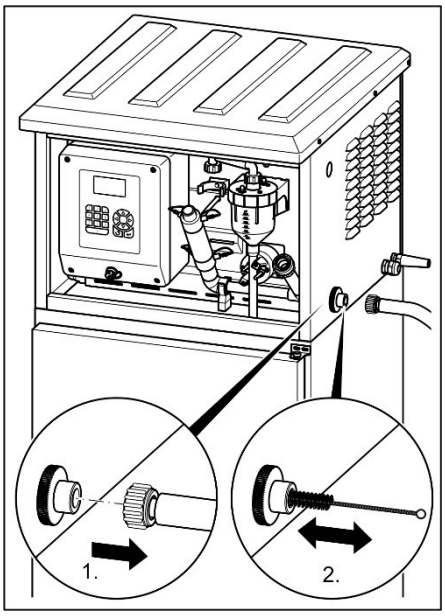
1.



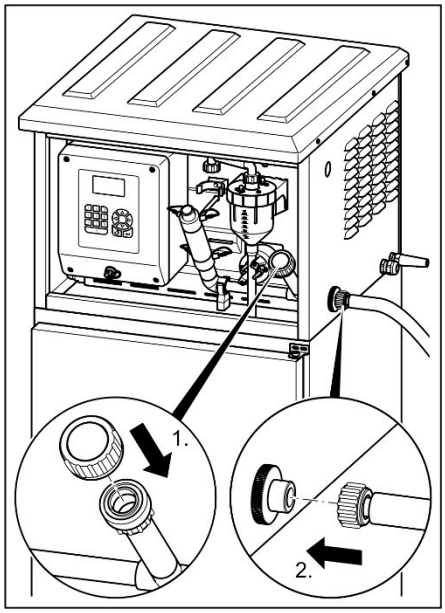
2.



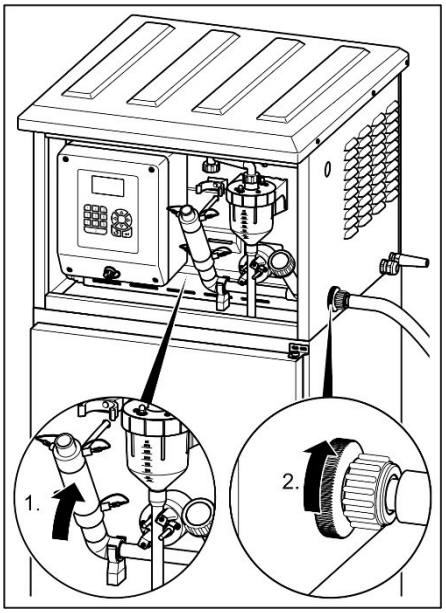
3.



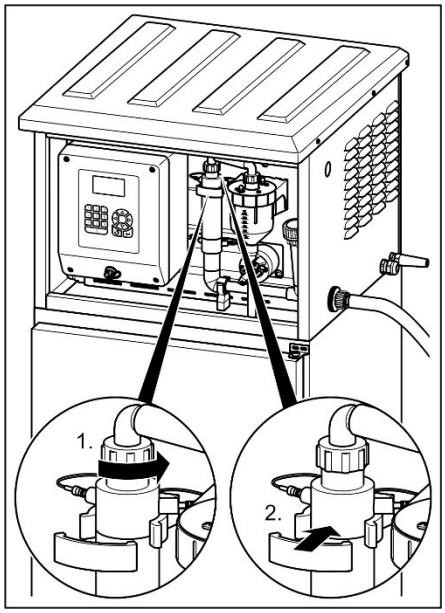
4.



5.



6.



7.

5.3 Troubleshooting

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

5.3.1 Open the housing to change the fuse (SP5 B)

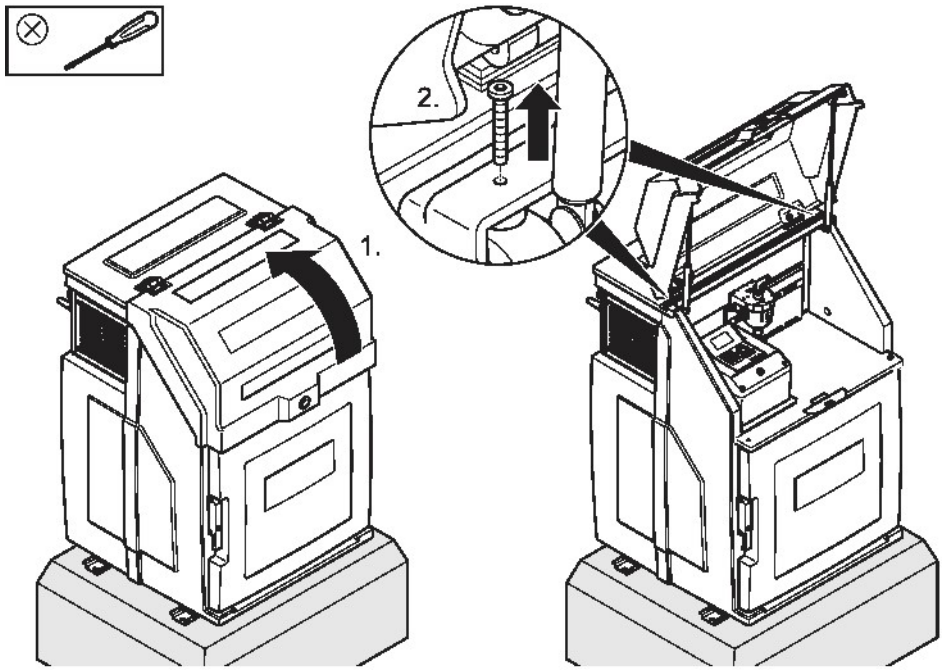


Figure 69 Open the lid and detach the cover (SP5 B)

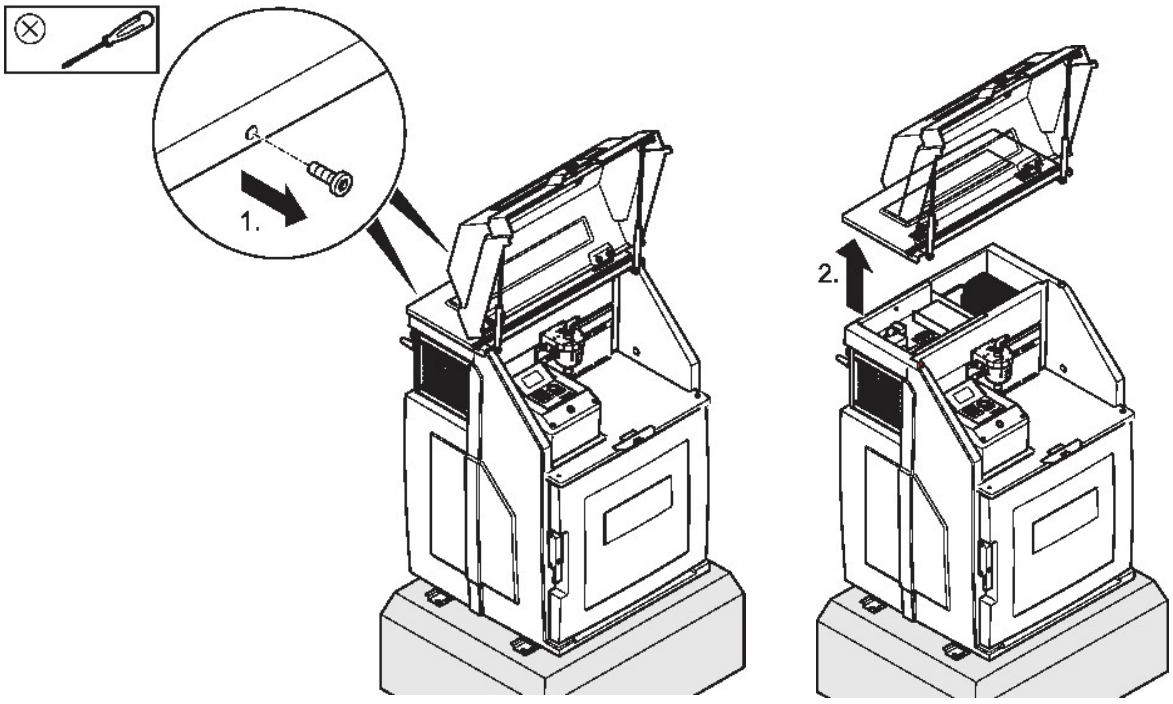


Figure 70 Remove the safety cover (SP5 B)

5.3.2 Open the housing to change the fuse (SP5 C, SP5 S – SP5 S-MS)

Open the housing lid as described in figure 15, page 18 and figure 16, page 18

5.3.3 Change the fuse

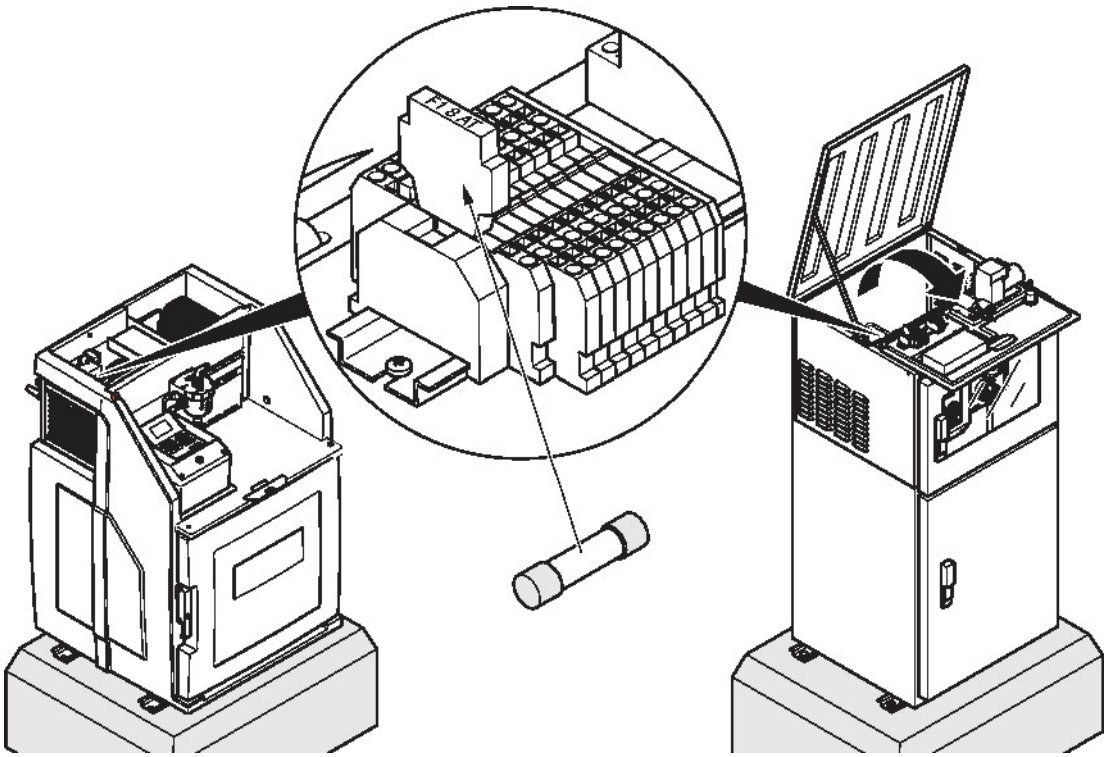


Figure 71 Fuse support (left SP5 B; right SP5 xx

If the problem is not fixed after having checked or changed the fuse, please contact the customer service

5.3.4 Reassemble the housing (SP5 B)

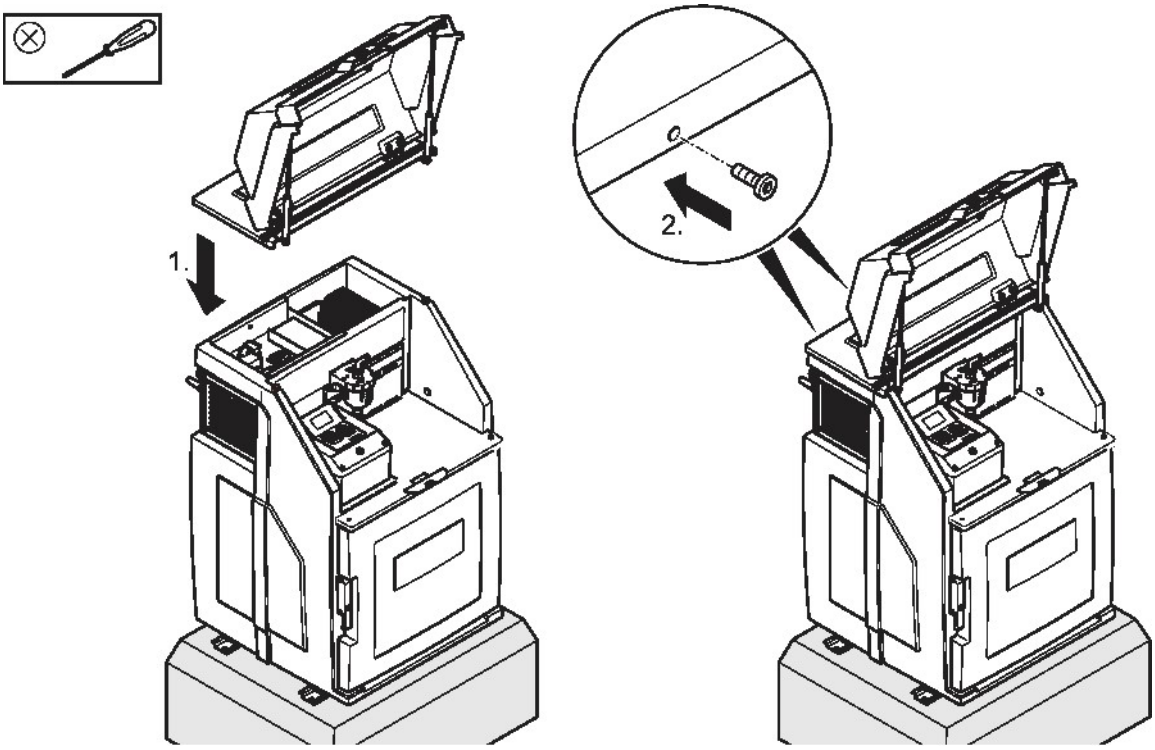


Figure 72 Install the safety cover (SP5 B)

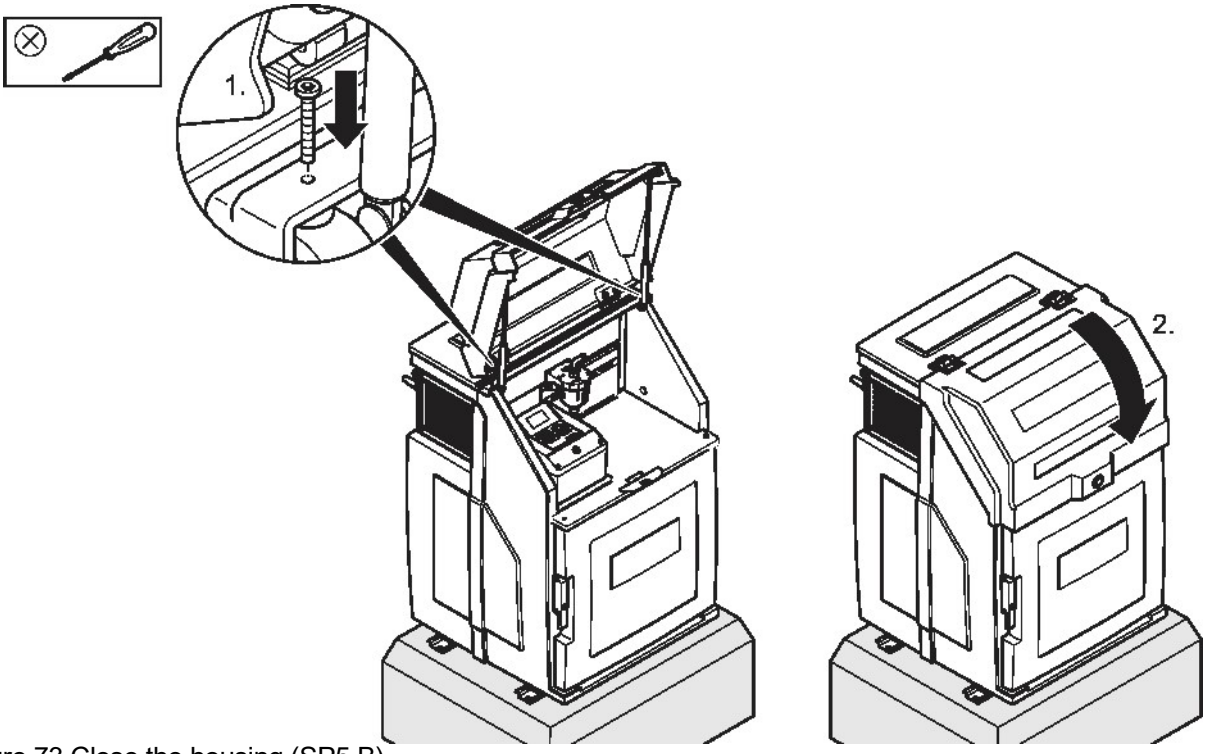


Figure 73 Close the housing (SP5 B)

5.3.5 G Reassemble the housing (SP5 C, SP5 S – SP5 S-MS)

Close the housing lid as described in figure 20, page 20, figure 24, page 23 and figure 25, page 23.

5.4 Decommissioning and storage of device

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 (disconnect from mains)

6.1 Spare parts

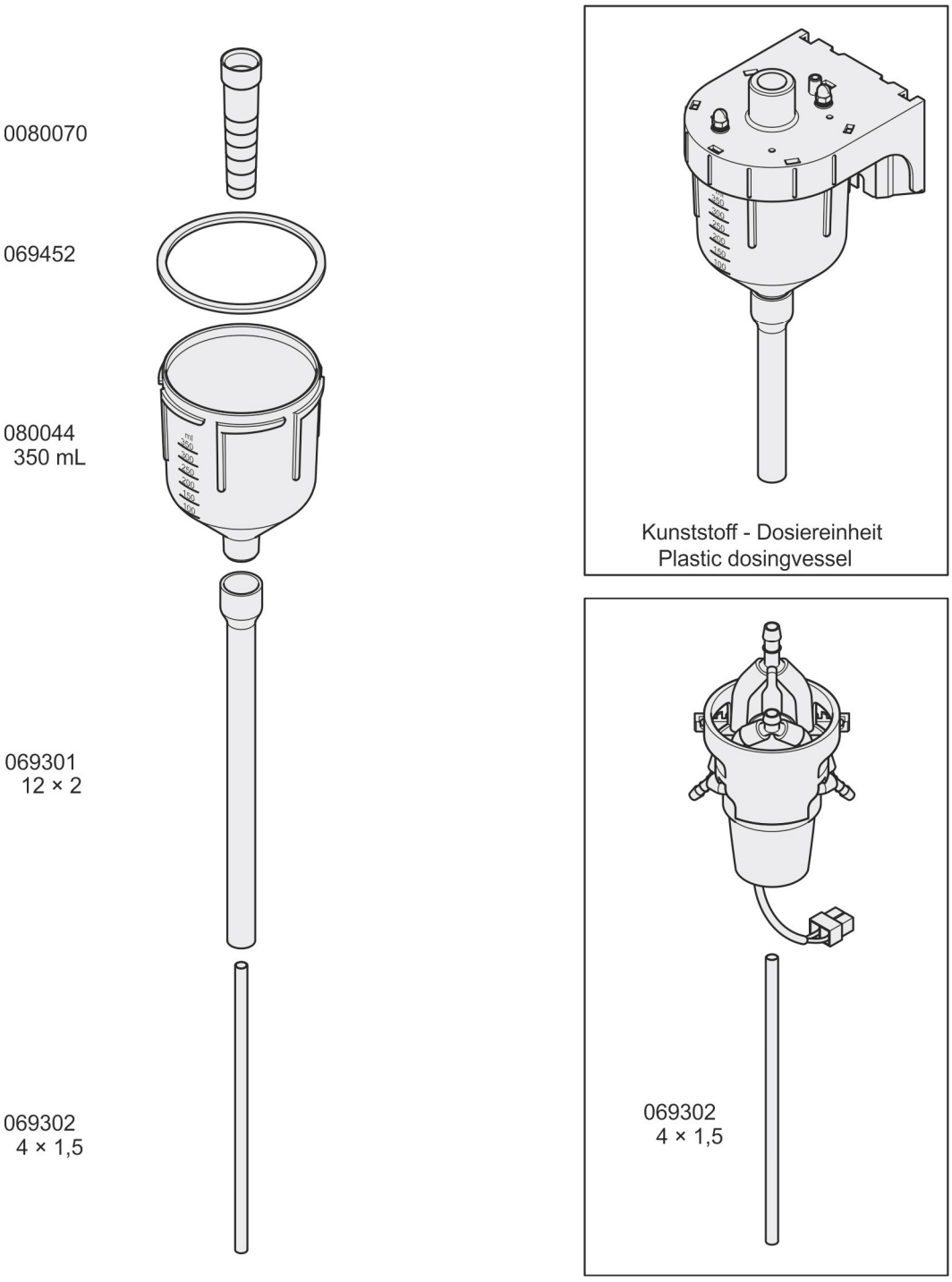


Figure 74 Plastic dosing vessel

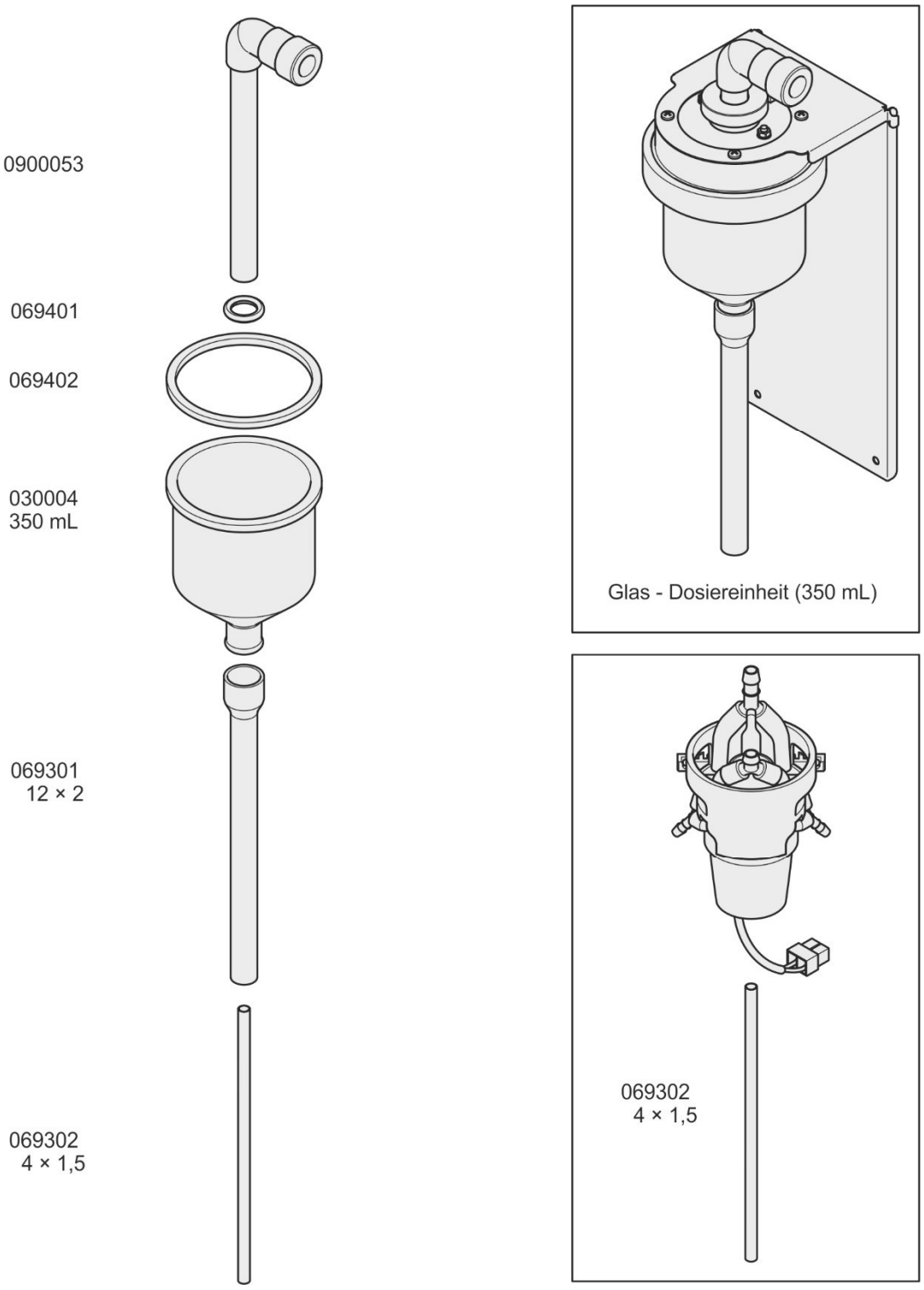


Figure 75 Glass dosing vessel (350 ml)

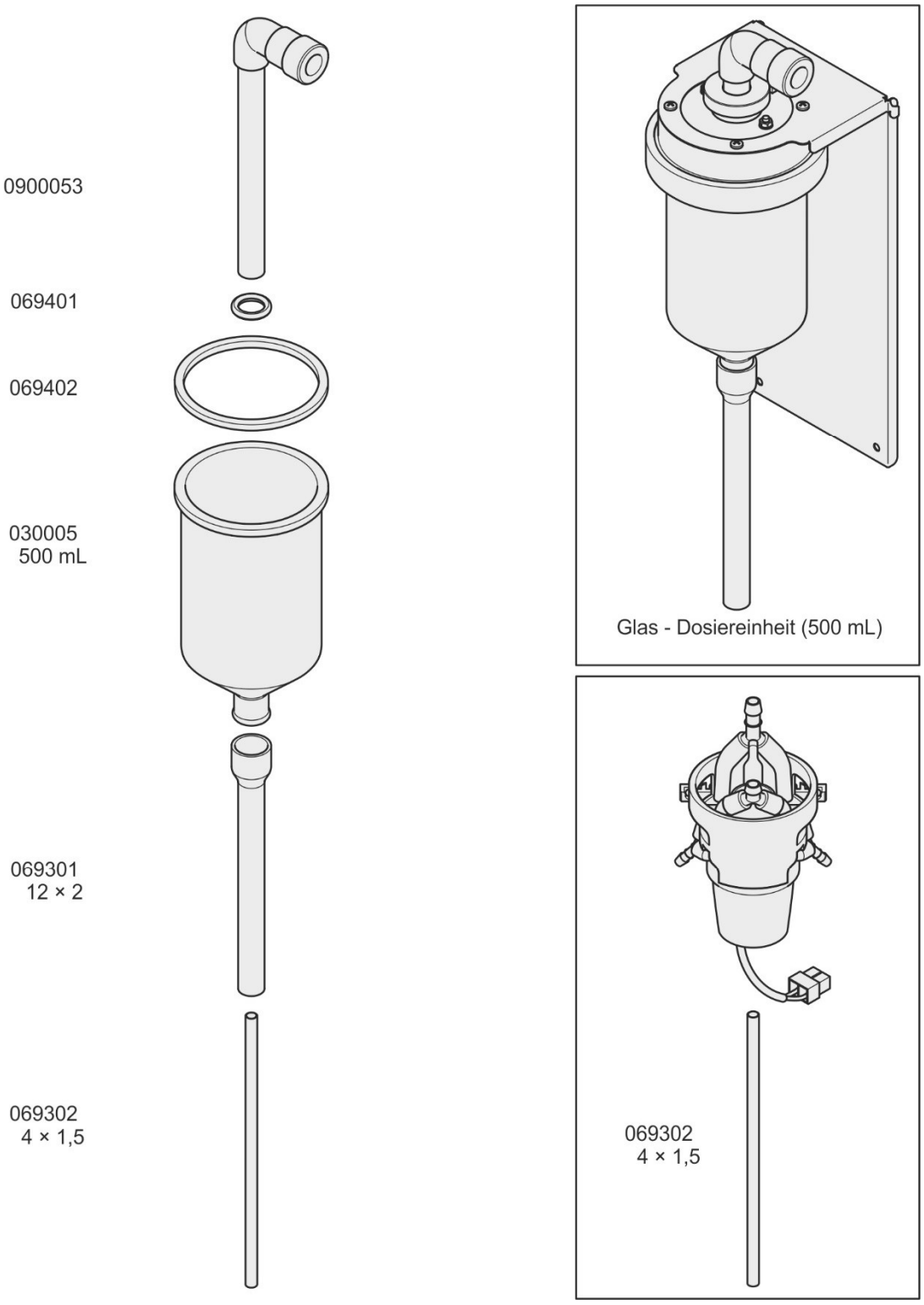


Figure 76 Glass dosing vessel (500 ml)

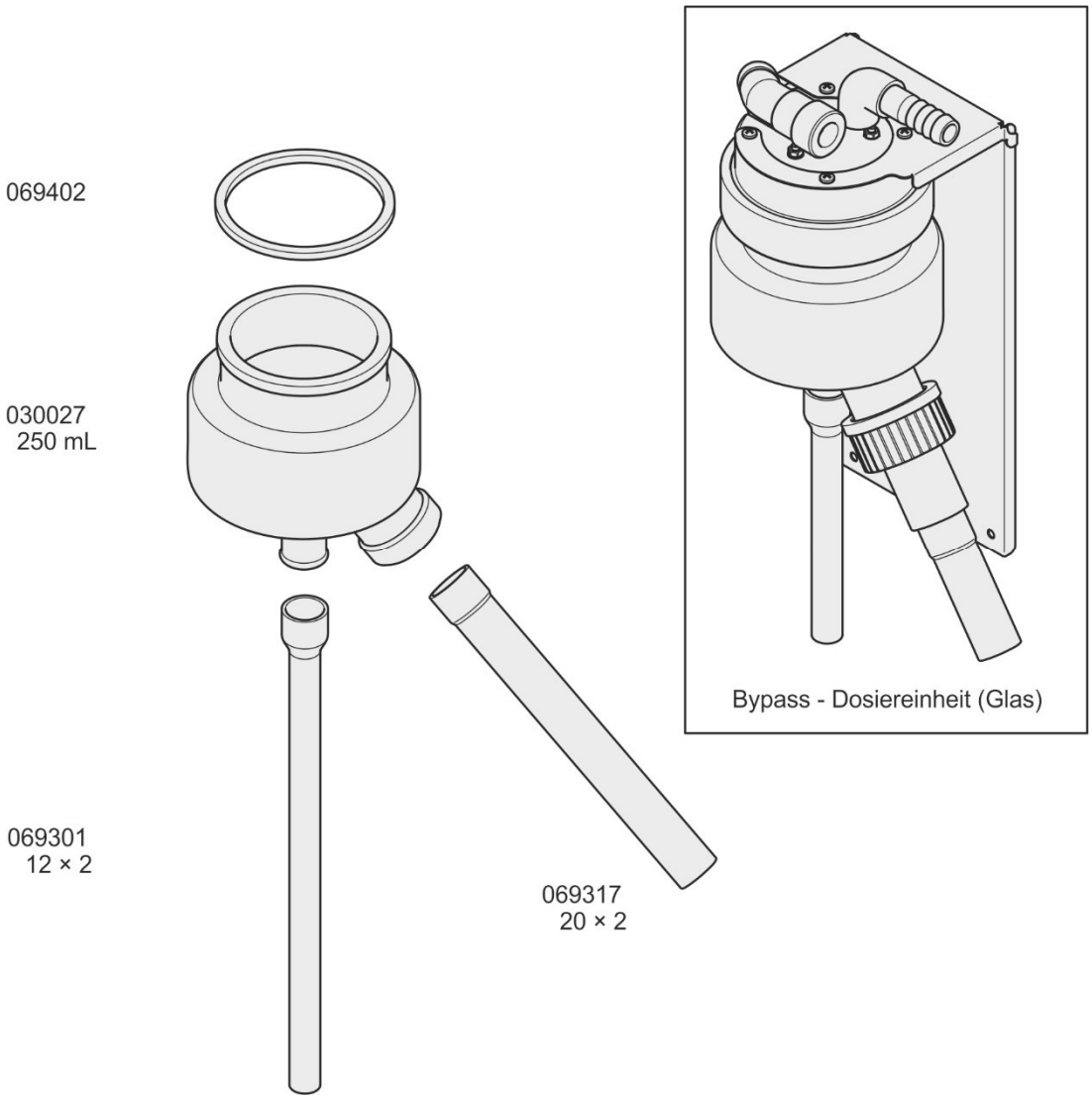


Figure 77 Glass dosing vessel (flow-through)

Chapter 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.p

MAXX Mess- u. Probenahmetechnik GmbH
Hechinger Str. 41, D-72414 Rangendingen
Tel. +49 (0) 7471-98481 0 Fax +49 (0) 7471-98481 44
www.maxx-gmbh.com
e-mail: info@maxx-gmbh.com