Original installation and operating manual

EN-US

POWS Pure Oil Water Separator

› POWS 100
› POWS 200

Document:
SPPOWS_100_manual_EN_07_2024
SPPOWS_200_manual_EN_07_2024
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Table of contents

1. Information on documentation

This documentation contains all the necessary steps for use of the product and the accessories.

1.1 Contact

Manufacturer	Service and tools
SULLIVAN PALATEK AIR COMPRESSORS 1201 West US Highway 20 Michigan City, Indiana 46360 Phone: 219.874.2497 Fax: 219.809.0203 info@palatek.com www.sullivan-palatek.com	SULLIVAN PALATEK AIR COMPRESSORS 1201 West US Highway 20 Michigan City, Indiana 46360 Phone: 219.874.2497 Fax: 219.809.0203 info@palatek.com www.sullivan-palatek.com

INFORMATION	Country specific manufacturer representation
	You can contact the country-specific manufacturer's representative via the address listed in the address section on the rear cover or by using the contact form on the manufacturer's website.

1.2 Information regarding installation and operating manual

INFORMATION	Copyright protection!
	The contents of the installation and operating manual in the form of text, figures, illustrations, photographs, technical drawings, diagrams and other representations are protected by the copyright of the manufacturer. The distribution as well as the duplication of this document, the exploitation and the communication of its contents are prohibited unless expressly authorized.

Publication date	Revision	Version	Reason for change	Scope of change
30. July 2024	00	00	New document	New document

The installation and operating manual, hereinafter referred to as the manual, must always be kept close to the product and be in a permanently legible condition.

The manual must be handed over along with the product if it is sold or passed on.

NOTICE	Observe the manual!
	This manual contains all the basic information required for safe operation of the product and must be read before any actions are performed. Otherwise personal and material hazards as well as malfunction and device failure are possible.

1.3 Other applicable documents

This manual describes all steps required to install and operate the **POWS**.

More detailed information about the installation and operation of the accessories is contained in the following installation and operating manuals:

- Instruction leaflet on filter replacement
- Installation and operating manual for heating system (**POWS 200**)

2. Safety

2.1 Use

2.1.1 Intended use

The **POWS**, also referred to as the “product” below, is used to treat demulsifiable compressor condensates from oil-lubricated and oil-free compressors. Physical processes are used to separate impurities, as well as oils that can be directly separated, from the corresponding water.

Any use of this system other than the use described in this manual is hereby deemed to be non-intended and can cause a hazard for the safety of people and the environment.

The following must be noted for intended use:

- Read and follow the manual.
- Use the product and the accessories exclusively within the operating parameters specified in the Technical data section and in accordance with the agreed terms of supply.
- Only use the product and accessories with media which are free of caustic, aggressive, corrosive, toxic, flammable, oxidizing and inorganic components.
  In cases of doubt an analysis must be carried out.
- Only use the product and accessories in areas which are free of toxic and corrosive chemicals and gases.
- Use the product and accessories only within a pipeline system designed for the operating parameters specified in section Technical data, with appropriate connections, pipe diameters and assembly clearances.
- Use the product and the accessories exclusively outside of areas exposed to mechanical loads and splash water.
- Only use the product and accessories outside potentially explosive atmospheres.
- Use the product and the accessories exclusively outside of areas exposed to direct sunlight and heat sources.
- Combine the product and the accessories only with the recommended manufacturer products and components indicated in this manual.
- Adhere to the prescribed maintenance schedule.

Before using the product and the accessories, the operating company must make sure that all conditions and prerequisites for intended use are given.

The product and the accessories have been exclusively designed for stationary use in a commercial or industrial area. All of the assembly, installation, operation, maintenance, uninstallation and disposal work described may only be performed by qualified skilled technical personnel.

2.1.2 Reasonably foreseeable misuse

Reasonably foreseeable misuse is deemed to have occurred if the product or the accessories are used in any other way than that described in the section “Intended use”. Reasonably foreseeable inappropriate use includes the use of the product or the accessories in a manner not intended by the manufacturer or supplier but which may result from foreseeable human behavior.

Reasonably foreseeable inappropriate use includes:

- The execution of any kind of modification, in particular constructive and process-technology related interventions.
- The suspension, bridging or non-application of existing or recommended safety equipment.
- Use for filtering wastewater other than compressor condensate (e.g., industrial wastewater).
- Disposal of waste oils.

This list is not exhaustive as not all possible inappropriate use can be foreseen in advance. If the operating company is aware of any inappropriate use of the product or accessories which are not listed here, the manufacturer must be informed immediately.

2.2 Responsibility of the operating company

The responsible operating company must ensure the following to prevent accidents, incidents and adverse effects on the environment:

- Before all actions, check to ensure that the manual available does in fact belong to the product.
- The product and the accessories are used, serviced and repaired in accordance with the intended use.
- The product and accessories are only used with the recommended and fully operable safety equipment.
- All assembly, installation and maintenance work is carried out by qualified skilled technical personnel only.
- Personnel have the necessary personal protective equipment available and also use this equipment.
- Suitable technical safety measures are taken so that the permissible operating parameters are adhered to.
- Keep all safety symbols and the type plate on the product and accessories in a legible state. Replace damaged and illegible markings immediately.
- All locally applicable legal requirements and regulations regarding the protection of bodies of water, as well as the associated mandatory documentation obligations (e.g., results from turbidity test, retention periods), must be complied with.

2.3 Target group and personnel

This manual addresses the personnel listed below who are involved with work on the product or the accessories.

INFORMATION	Personnel requirements!
	• Minors are strictly prohibited from working with and on the product and its accessories. • The personnel may not execute any actions on the product or the accessories when they are under the influence of drugs, medications, alcohol or other substances that may impair their consciousness.

Operating personnel

Operating personnel are persons who are able to operate the product and the accessories safely on the basis of knowledge of the manual and instruction in the use of the product and accessories. Operating personnel can recognize possible malfunctions and dangerous situations independently and arrange for corresponding measures.

Skilled technical personnel - Transport and storage

Skilled technical personnel - transport and storage are people who, due to their training, professional experience and qualifications, have all the necessary skills to safely execute all actions in connection with the transport and storage of the product, to instruct, to recognize possible dangerous situations independently and to execute measures to avoid danger.

The skills required include, in particular, experience operating hoists, forklifts and lifting equipment and familiarity with locally applicable laws, standards and guidelines relating to transport and storage.

Skilled technical personnel specialized in pressure equipment and systems

Skilled technical personnel specializing in pressure equipment and systems consists of people who, as a result of their training, professional experience and qualifications, have all the necessary capabilities to safely carry out and order all activities related to pressurized fluids and systems, to independently identify potentially hazardous situations, and to implement appropriate measures to avert any danger.

The skills required include, in particular, experience using measuring equipment and control equipment, as well as familiarity with locally applicable laws, standards and regulations for pressurized systems.

Qualified service technicians

Qualified service technicians are persons who have the skills and qualifications as defined in all the aforementioned definitions concerning skilled technical personnel. Qualified service technicians must be verifiably trained and authorized for all work on the product.

2.4 Explanation of the safety symbols used

The symbols used below indicate safety-relevant and important information which must be adhered to when handling the product and to ensure safe and optimum operation.

Symbol	Description / explanation
	General hazard symbol (danger, warning, caution)
	Pressurized system
	Read and follow the installation and operating manual
	General instruction symbol
	Wear safety footwear
	Use protective gloves (cut-proof and liquid-resistant)
	Wear safety goggles with side shields
	General information

2.5 Safety instructions and warning notices

This section provides an overview of all the important safety aspects for personal protection as well as for the safe and problem-free operation of the product and accessories.

The following sections list the dangers posed by this product and the accessories even with intended use. To minimize the risk of personal injury and property damage and to avoid dangerous situations, observe the safety instructions listed and adhere to the warning notices in the other sections of this manual.

Basic warning notices and the necessary qualifications of skilled technical personnel are always listed at the beginning of the section in the “Warning notices” section.

Warning notices related to specific actions are printed directly before potentially hazardous procedures or sequences of actions.

2.5.1 Basic safety instructions

- Before starting work, refer to the technical documentation for the entire system and observe the overall operating instructions.
- Carry out a risk assessment before starting work on site (last minute risk assessment).
- Use suitable personal protective equipment for all work.
- Set up a safety area around the working area during all installation, maintenance and repair work.
- Use existing system-specific protection procedures (e.g., LOTO procedure) to safely de-energize and isolate the system or system sections.

2.5.2 Safe operation

The following actions may result in serious injury or death:

- Commissioning and operation of the product and accessories outside the permissible limit values and operating parameters
- Unauthorized interference and unauthorized modifications of the product and accessories

To guarantee the safe operation of the product and accessories, observe the following:

- Observe the limits and operating parameters specified on the type plate and in the manual.
- Check whether the permissible operating parameters have been changed or restricted by the use of accessories.
- Observe the installation conditions and the ambient conditions.
- Adhere to the maintenance intervals.

2.5.3 Sudden escape of pressurized fluids

The following situations may result in serious injury or death:

- Contact with fast or suddenly escaping fluids
- Bursting system components
- Whipping of pressurized hoses and pipes

For the safe handling of pressurized systems, observe the following:

- Observe the following safety rules during all work:
  1. Shut down the system or system section.
  2. Secure the system or system section against restarting.
  3. Reduce the pressure in the system or all system sections to the ambient pressure.
     e.g. by slowly releasing the pressure in a controlled manner via relief valves
  4. Lock out and tag out the system or system section so that it cannot be pressurized again.
- Check the pressurized system or system section for safety, contamination and possible damage.
- Before pressurization, check all system connections for leak tightness and tighten if necessary.
- Make absolutely sure to charge the system or system section with pressure slowly.
- Avoid pressure blows and high differential pressures.
- Compensate any vibrations occurring in the pipe network by using vibration dampers.

2.5.4 Transport and storage

Improper transportation and improper storage may result in personal injury or property damage.

In order to ensure safety during the transport and storage of the product and accessories, observe the following:

- Use personal protective equipment for all work with packaging material.
- Handle packaging, the product and accessories carefully.
- Transport and handle the product and accessories according to the markings on the packaging.
- Use only proper transportation, lifting and lashing equipment that is in proper working order.
- Use only transportation, lifting and lashing equipment that are rated for the total weight of the product.
- Always adhere to the permissible transport and storage parameters.
- Store the product and accessories only outside of areas exposed to direct sunlight and heat sources.
- Empty the assembled product before transporting it.

2.5.5 Installation

Improper physical or electrical installation of the product and accessories may result in personal injury and property damage as well as impair operation.

For safe physical and electrical installation, observe the following:

- Install the product, the accessories, and all parts and materials used so that they are not subject to mechanical tension.
- Check all plug-type connections for a correct fit.
- Avoid a stumbling hazard by routing cables and hoses accordingly.
- Fix and fasten hoses in such a way that they cannot flap around.
- Install the inlet and drain lines as fixed pipes.

2.5.6 Maintenance

Improper performance of maintenance and repair work can result in serious injury or death.

For safe maintenance and repairs, observe the following:

- Before starting work, depressurize the pressurized product and accessories and secure them against unintentional pressurization.
- Before starting work, isolate the product and accessories from the power source and secure them against being switched back on again unintentionally.
- Only use materials approved for the respective application.
- Use only suitable tools that are in proper working order.
- Only use cleaned pipes and hoses that are free of dirt and corrosion.
- Never use abrasive or aggressive cleaning agents or solvents which could damage the outer coating (e.g. markings, type plate, corrosion protection, etc.).
- Never clean the device with hard or pointed implements.
- Use only the specified materials and media for cleaning.
- Observe statutory, local and in-house hygiene regulations.
- Pay attention to order and cleanliness during maintenance and repair work. Prevent contamination from entering the opened product or accessories. Store disassembled components and accessories directly in a safe place.
- After completing maintenance and repair work, remove all tools and cleaning agents used, as well as all parts that are no longer needed, from the work area.
- Only dispose of the product and accessories when cleaned and freed of any residue.
- Dispose of all components, parts, operating and auxiliary materials as well as cleaning agents professionally and in accordance with all locally applicable legal requirements and regulations.

2.5.7 Handling hazardous substances

Contact with condensate containing substances which endanger health and the environment can pose a health hazard, causing irritation and/or damage to the eyes, skin and mucous membranes. In addition, polluted condensate must be prevented from entering the sewerage system, waters or the ground.

For the safe handling of polluted condensate, observe the following:

- Use suitable protective equipment when handling condensate.
- Collect and dispose of any leaking or spilled condensate in accordance with locally applicable legal requirements and regulations.

2.5.8 Use of spare parts, accessories or materials

The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure as well as material damage can occur.

- Only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer to complete all work.
- Only use the materials approved for the respective application and suitable tools in proper working order.
- Only use cleaned pipes that are free of dirt and corrosion.
- Only use electric components and materials that comply with locally applicable legal requirements and regulations (standards, directives, etc.) for electrical safety.

2.6 Warning notices

Warning notices warn against dangers when handling the product and accessories.

In order to prevent accidents, personal injury and property damage as well as impairments during operation, it is essential to adhere to the warning notices.

Structural set up:

SIGNAL WORD	Type and source of danger!
 Symbol	Possible consequences if the danger is ignored • Measures to prevent the danger

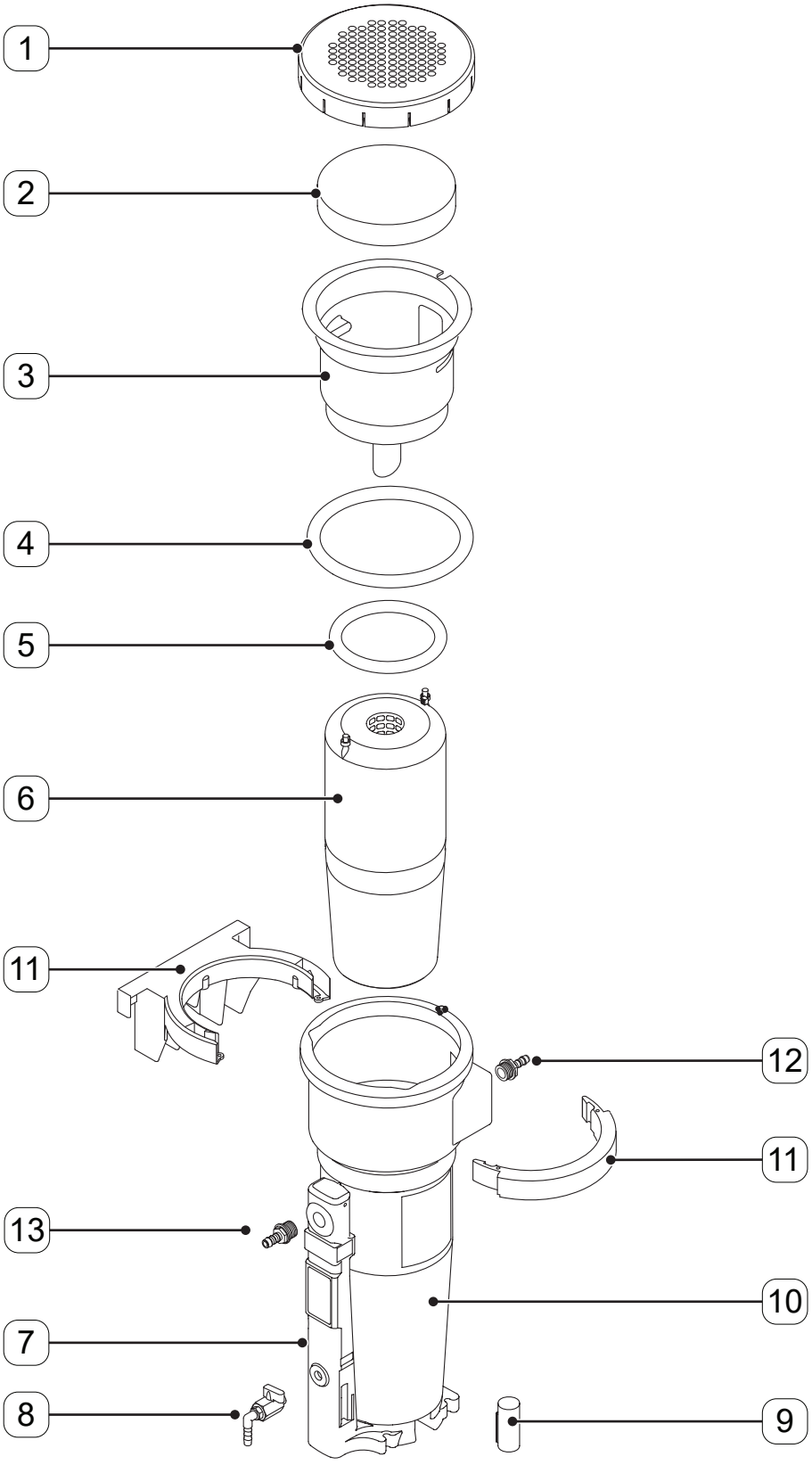
Signal words:

DANGER	**Imminent hazard** Consequences of non-compliance: Death or serious personal injury
WARNING	**Imminent hazard** Consequences of non-compliance: Death or serious personal injury are possible
CAUTION	**Potential hazard** Consequences of non-compliance: Personal injury or damage to property are possible
NOTICE	**Additional information** Consequences of non-compliance: Damage to property, malfunction and device failure are possible. No hazard to people or endangerment of safe operation.

3. Product information

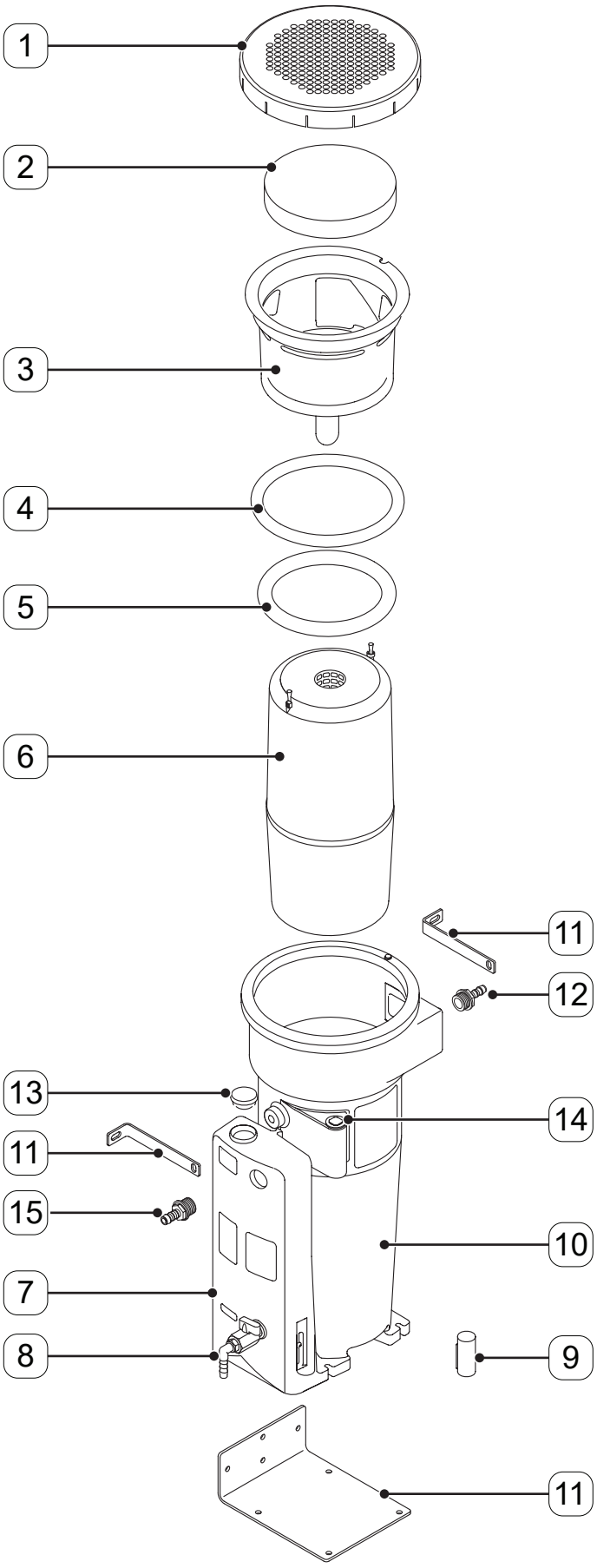
3.1 Product overview

3.1.1 POWS 100



No.	Description / explanation
[1]	Cover
[2]	Filter mat
[3]	Pressure relief chamber with feed pipe
[4]	Cord packing
[5]	Cord packing
[6]	Filter element
[7]	Riser duct
[8]	Service valve
[9]	Reference turbidity tube
[10]	Container
[11]	Wall bracket
[12]	Hose connection, condensate inlet
[13]	Hose connection, condensate outlet

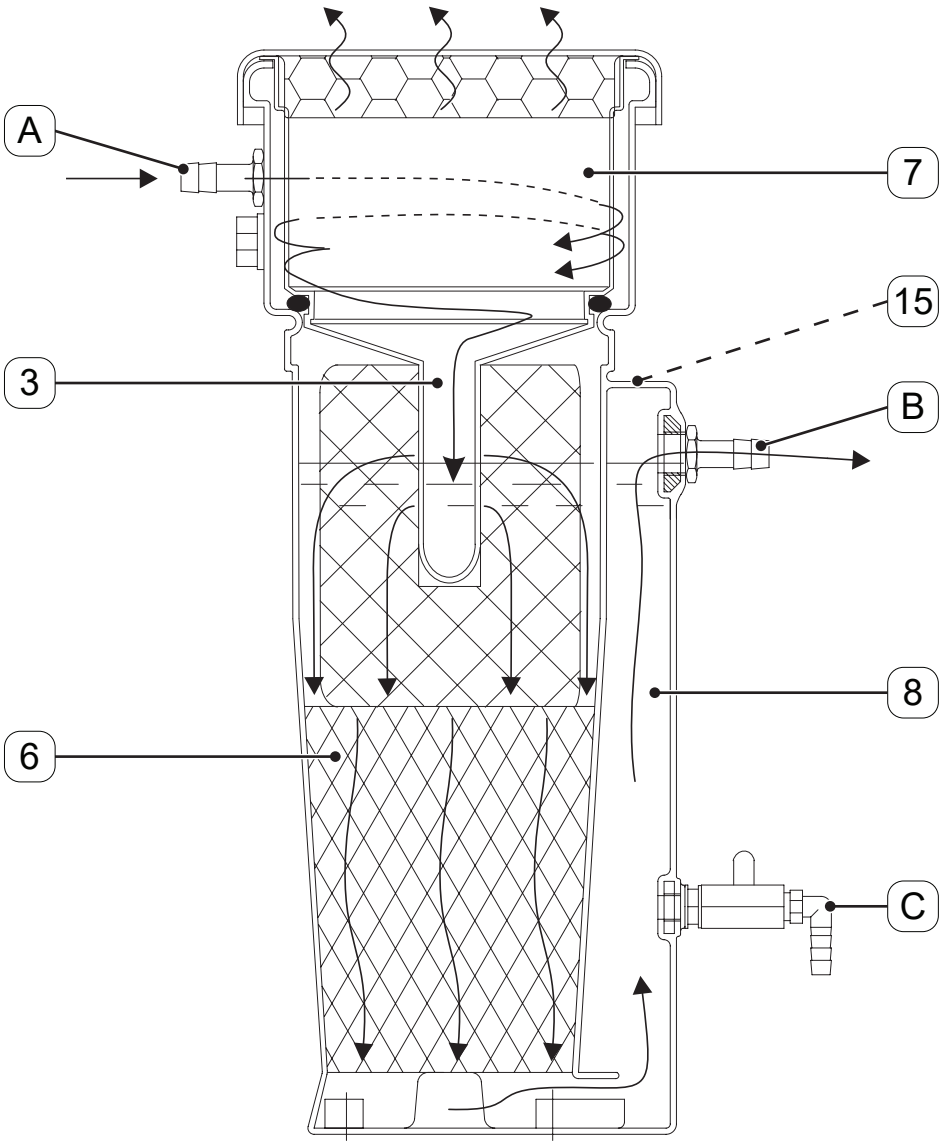
3.1.2 POWS 200



No.	Description / explanation
[1]	Cover
[2]	Filter mat
[3]	Pressure relief chamber with feed pipe
[4]	Cord packing
[5]	Cord packing
[6]	Filter element
[7]	Riser duct
[8]	Service valve
[9]	Reference turbidity tube
[10]	Container
[11]	Wall bracket
[12]	Hose connection, condensate inlet
[13]	Plug
[14]	Level indicator
[15]	Hose connection, condensate outlet

3.2 Function description

3.2.1 POWS 100 / 200



No.	Description / explanation	No.	Description / explanation
[A]	Condensate inlet	**[6]**	**F**ilter element
[B]	Condensate outlet	**[7]**	Pressure relief chamber
[C]	Service valve	**[8]**	Riser duct
[3]	Feed pipe	**[15]**	Level indicator (POWS 200), not shown

The condensate is fed from the condensate collection line via the condensate inlet **[A]** into the pressure relief chamber **[7]**. In the pressure relief chamber **[7]**, the entrained compressed air is separated out. The condensate then flows via the feed pipe **[3]** into the filter element **[6]**.

The filter element **[6]** comprises a prefilter and a main filter for binding any residual oil constituents.

The condensate flows through the filter element **[6]** and into the riser duct **[8]**.

The purified condensate is fed via the riser duct **[8]** and the condensate outlet **[B]** into the wastewater connection.

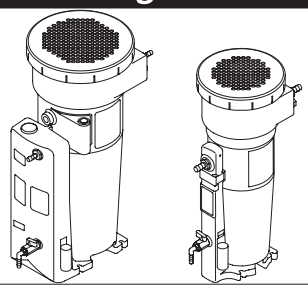
If the filter element **[6]** becomes saturated with oil, it will need to be replaced (see section “9.3.2 Filter replacement and cleaning” on page 43).

A level indicator **[15]** is integrated into the pressure relief chamber **[7]** of the **POWS 200**. If the filling level in the pressure relief chamber **[7]** rises as a result of impaired condensate flow, the level indicator **[15]** will be pushed up so that the red marking on the level indicator **[15]** becomes visible.

A service valve **[C]** is provided so that the wastewater quality can be checked at any time.

3.3 Scope of delivery

The table below shows the scope of delivery of the **POWS**.

Figure	Description / explanation
	**POWS 100/200** including wall bracket and fixing materials.
	Original installation and operating manual

4. Technical data

4.1 Operating parameters

Parameters	POWS	
	100	200
Relative ambient air humidity	≤10 ... 80 %, without condensation	
Maximum operating pressure at condensate inlet	16 bar(g) 232 psi(g)	
Minimum / maximum ambient temperature	+5 ... +60 °C +41 ... +140 °F	
Minimum / maximum media temperature	+5 ... +60 °C +41 ... +140 °F	
Maximum condensate flow rate	2.95 l/h 0.779 gal/h	6 l/h 1.585 gal/h
Media	Compressor condensate, oil-contaminated	
Maximum operating weight	13.5 kg 29.76 lbs	24.35 kg 53.68 lbs
Maximum oil concentration at condensate outlet	20 mg/l 20 ppm	

4.2 Storage parameters

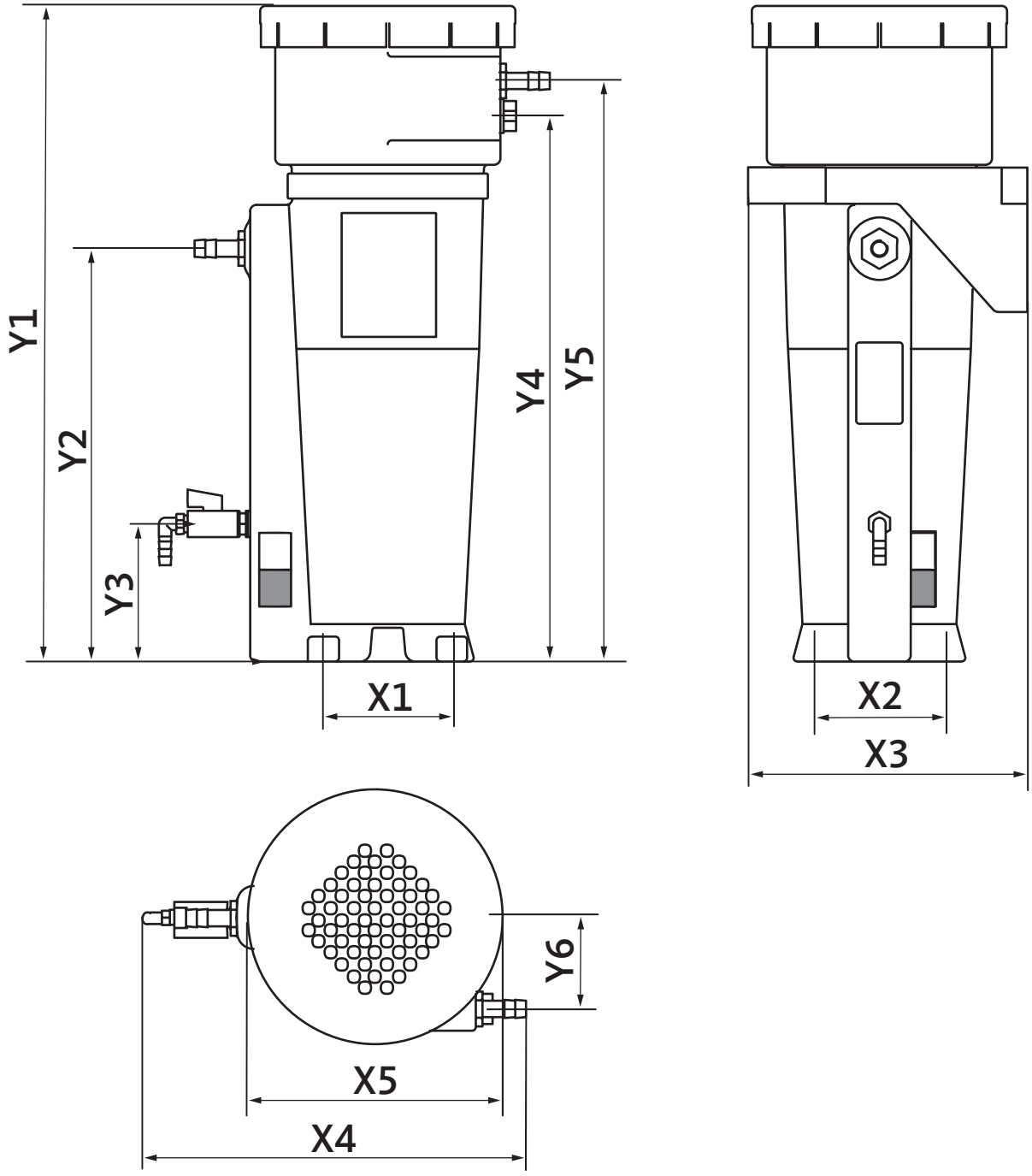
Parameters	POWS	
	100	200
Minimum / maximum temperature	+5 °C ... +60 °C (+33.8 °F ... +140 °F)	
Relative ambient air humidity	≤10 ... 80 %, without condensation	
Empty weight	3.5 kg 7.72 lbs	5.75 kg 12.68 lbs

4.3 Materials

Component	Material
Container, cover, pre-separator, pre-separator base	PE
Connection adapter	POM
Ball valve	Brass, nickel-plated
Oil pipe	PP

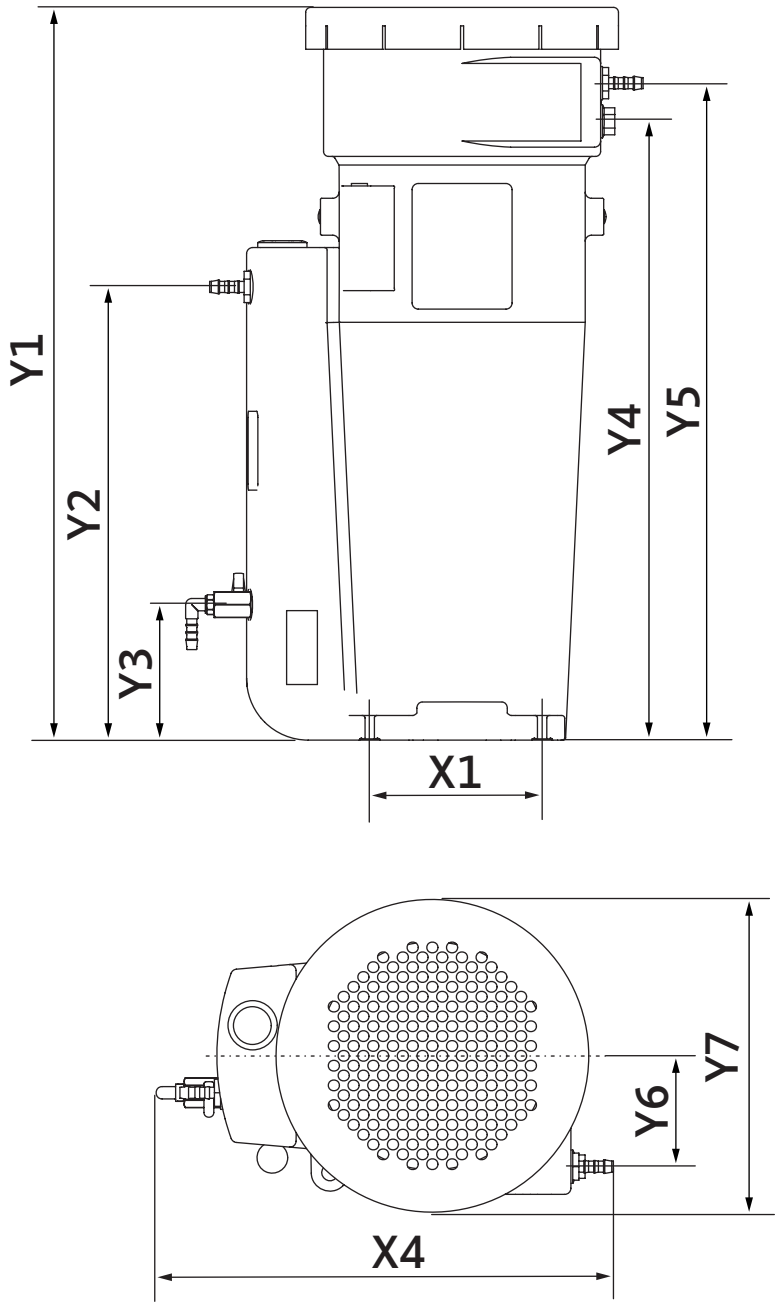
4.4 Dimensions

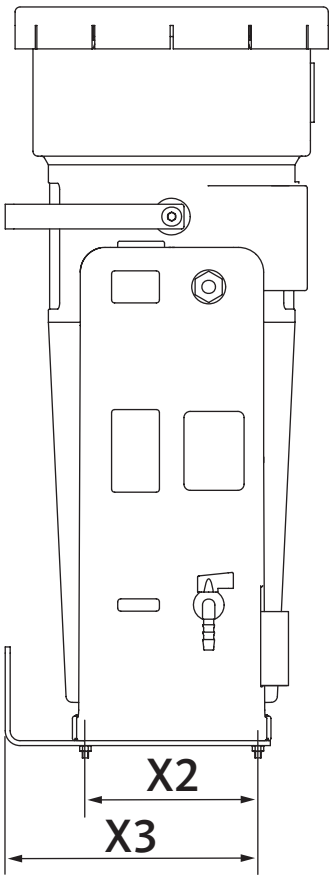
4.4.1 POWS 100



No.	[mm]	[in]		No.	[mm]	[in]
[X1]	100	3.937		**[Y2]**	330	12.992
[X2]	100	3.937		**[Y3]**	110	4.331
[X3]	222	8.74		**[Y4]**	433	17.047
[X4]	290	11.417		**[Y5]**	464	41.93
[X5]	200	7.874		**[Y6]**	70	18.268
[Y1]	528	20.787				

4.4.2 POWS 200

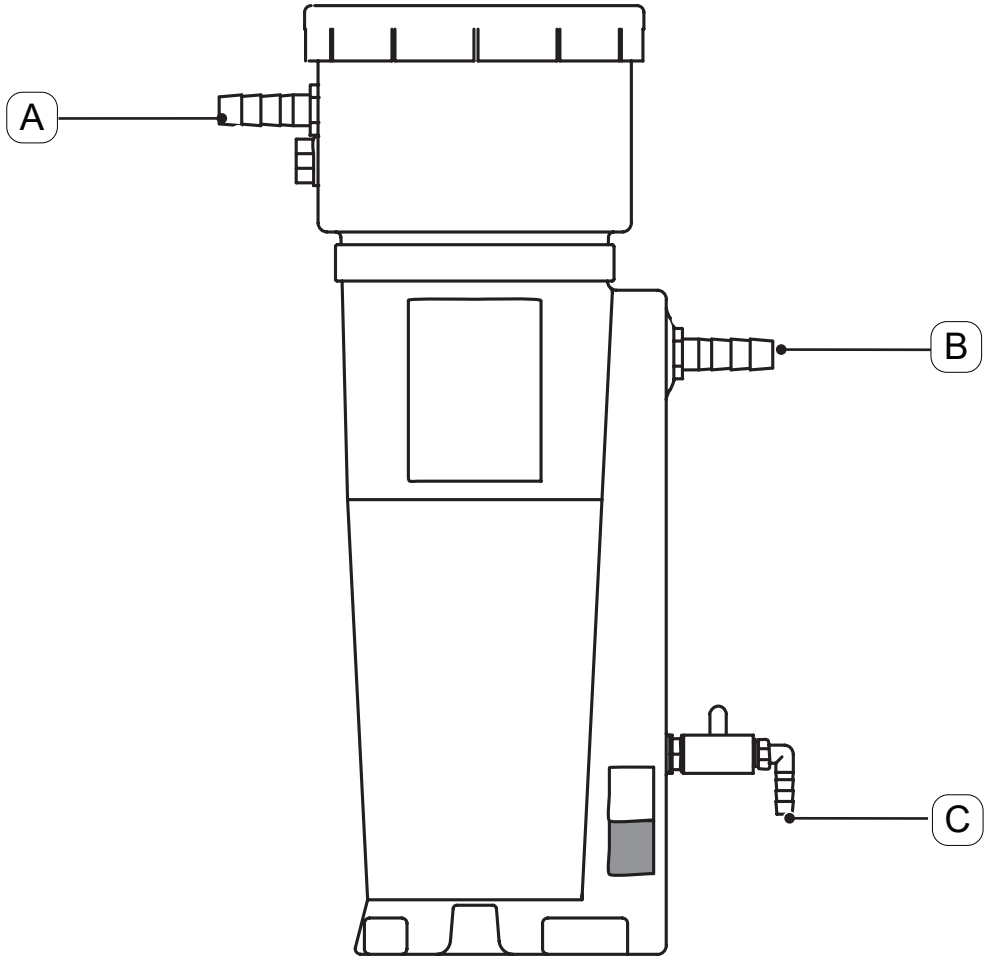




No.	[mm]	[in]
[X1]	140	5.512
[X2]	140	5.512
[X3]	205	8.071
[X4]	387	15.236
[Y1]	604	23.78
[Y2]	368	14.488

No.	[mm]	[in]
[Y3]	110	4.331
[Y4]	503	19.803
[Y5]	534	21.024
[Y6]	90	3.543
[Y7]	254	10

4.5 Connections

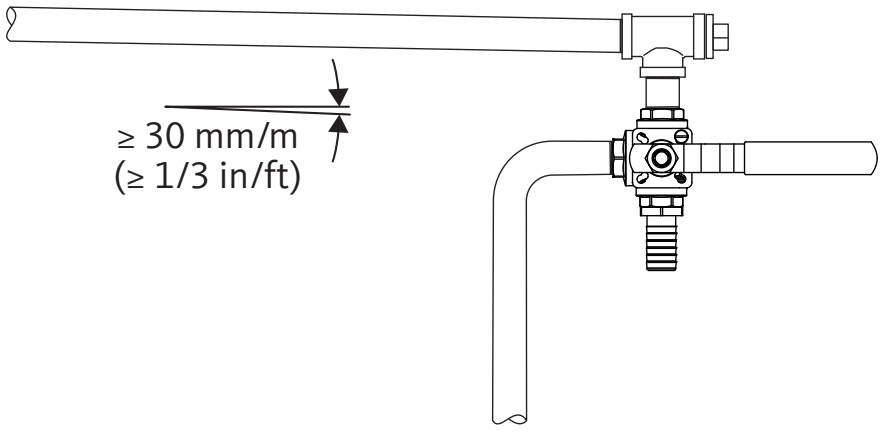


No.	Connection	Qty.	Description / explanation
[A]	G1/2" (dia. = 10 mm)	2	Hose connection, connection for the condensate inlet
[B]	G1/2" (dia. = 10 mm)	1	Hose connection, connection for draining the purified condensate
[C]	12 mm (0.47 in)	1	Service valve with elbow connector

4.6 Installation conditions

Observe the following conditions when setting up and selecting the place of installation:

- The place of installation must meet the following conditions:
  - ➝ Protected from mechanical loads
  - ➝ Protected from splash water
  - ➝ Protected from direct sunlight and areas exposed to heat sources
  - ➝ Protected from frost
  - ➝ Outside of hazardous locations
- The mounting surface must be level (gradient ≤10 mm/m (1/8 in/ft)) and smooth.
- The load-bearing capacity of the mounting surface must be suitable for the maximum operating weight of the **POWS** (see section “4. Technical data” on page 22).
- The mounting surface must be sealed, or a suitable spill protection basin must be in place.
  - ➝ In the event of damage, no untreated condensate or oil may get into the sewer system or the soil.
  - ➝ All locally applicable legal requirements and regulations regarding the protection of bodies of water must be complied with.
- Bumper guards must be installed if the product is being set up in the vicinity of traffic routes.
- The cross-section of the condensate collection line must be greater than G1" (Ø = 25 mm).
- Route the condensate collection line with a downward gradient of ≥ 30 mm/m (1/3 in/ft) to the place of installation of the **POWS**.
- Install a P-trap with a waste funnel inlet at the wastewater connection in order to prevent unpleasant odors. Select the size of the funnel so that no negative pressure can occur in the drain when the outlet hose hangs into it.
- The manufacturer recommends installing a 3-way valve at the tapping point on the condensate collection line to divert the condensate inlet into a separate container during maintenance work.



Example illustration

5. Transport and storage

5.1 Warning notices

CAUTION	**Improper transportation or storage!**
 	Improper transportation or storage may result in personal injury.
	• Use personal protective equipment for all work with packaging material. • Handle packaging, the product and accessories carefully. • Only use proper means of transport and lifting equipment that is in proper working order. • Always adhere to the permissible transport and storage parameters.

NOTICE	**Handling packaging materials!**
	Improper disposal of packaging materials can cause environmental damage.
	• Dispose of the packaging material in accordance with the applicable legal requirements and regulations of the country and place of use.

5.2 Transport

Personnel
Skilled technical personnel - transport and storage (see section “2.3 Target group and personnel” on page 8)

Transport work
• Only transport the product in its original packaging.
• Check the product for damage. Only use the product in an undamaged state.
• Transport and handle the product and accessories according to the markings on the packaging.
• Pack all parts impact-proof using suitable material.

5.3 Storage

Storage work
• Only store the product and accessories in their original and undamaged packaging.
• Adhere to the storage conditions in section “4.2 Storage parameters”.
• The storage location is dry, frost-free and lockable.
• Store the product and accessories only outside of areas exposed to direct sunlight and heat sources.
• Secure against falling over and protect against vibrations at the storage location.

6. Installation

6.1 Warning notices

DANGER	Use of incorrect spare parts, accessories or materials!
	The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure as well as material damage can occur.
	• Only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer to complete all work. • Only use the materials approved for the respective application and suitable tools in proper working order. • Only use pipes that are free of dirt, damage and corrosion.

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization. • Assemble all pipes and hoses free of mechanical stress.

6.2 Installation work

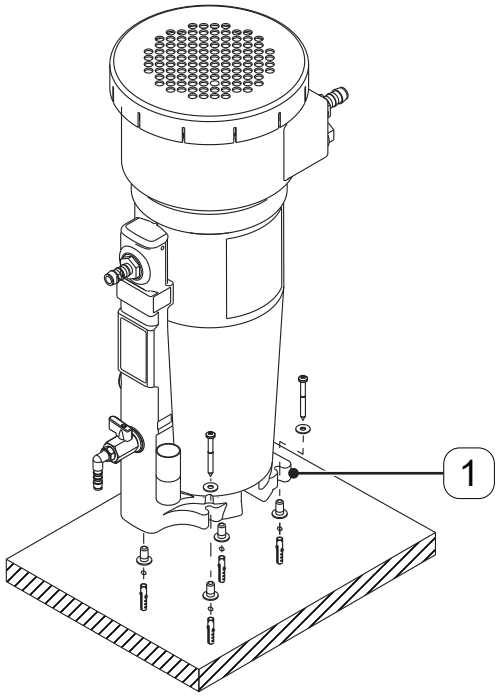
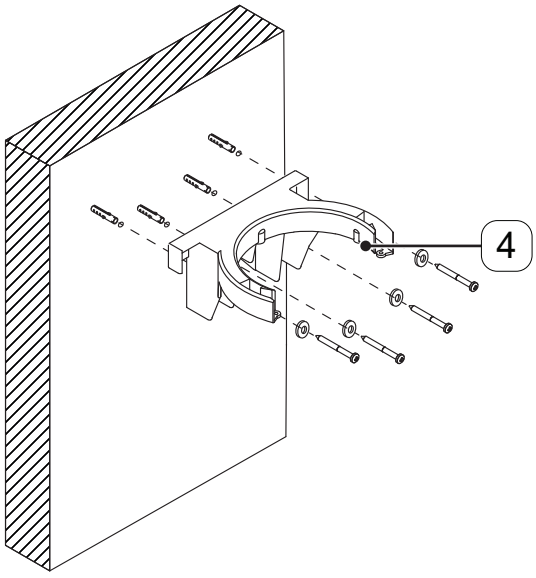
Personnel
Skilled technical personnel - pressure equipment and systems (see section “2.3 Target group and personnel” on page 8)

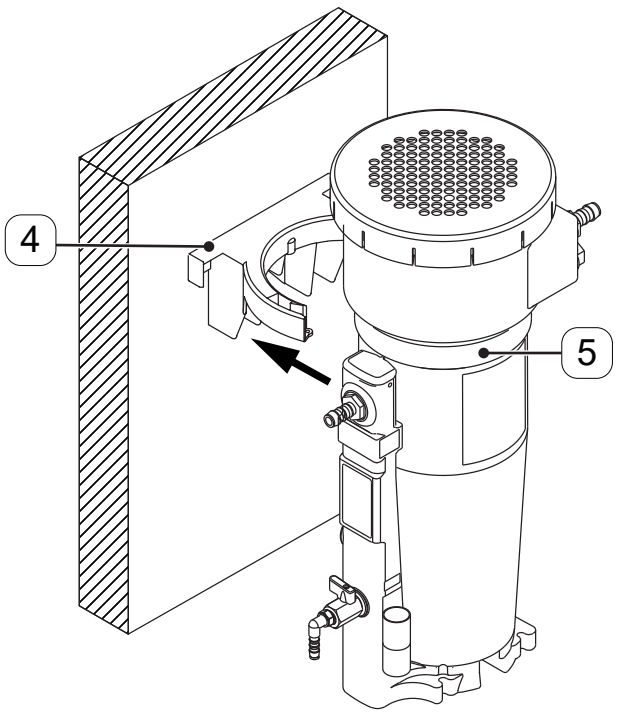
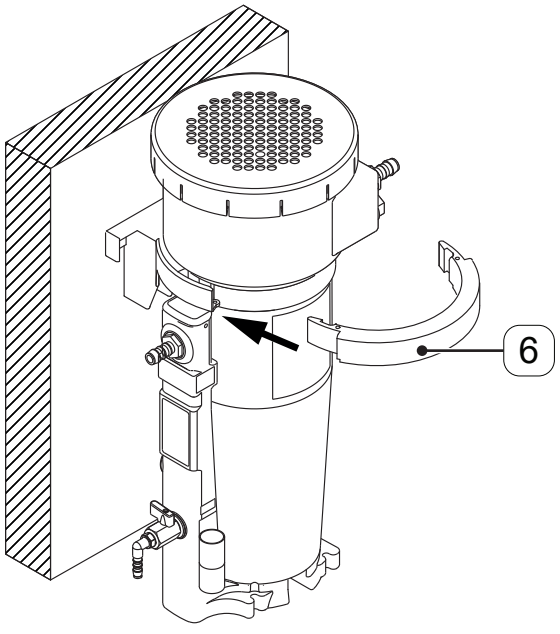
For installation work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Adjustable wrench • Water pump pliers • Spirit level • Power drill	• Sealing material (e.g. PTFE tape) for sealing the condensate connections provided by the customer • Hose clamps • Hose for condensate • Fixing materials supplied	**To be worn at all times:** 

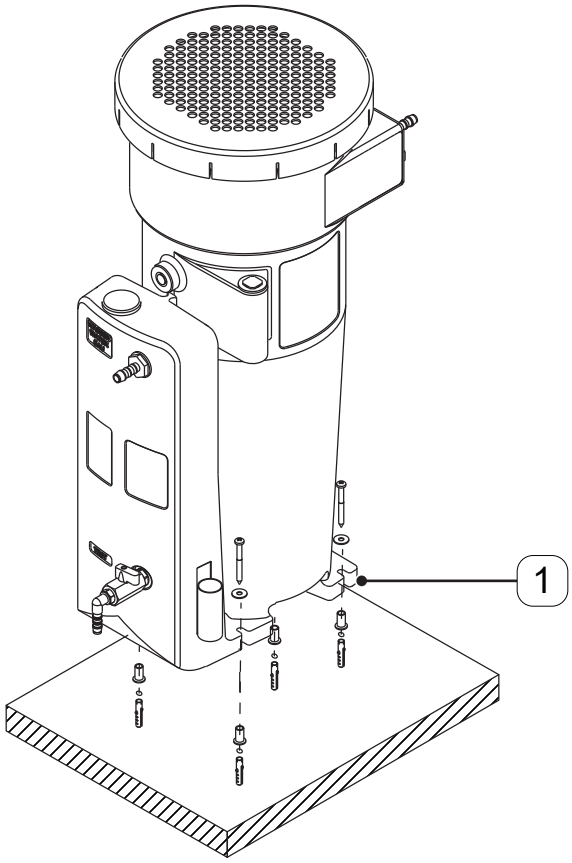
Preparatory work	
1.	Select and set up the place of installation according to the specifications in section “4.6 Installation conditions” on page 26.
2.	The condensate inlet line provided by the customer must be depressurized and locked and tagged out to prevent unintentional pressurization.
3.	Have the necessary tools and materials ready.
4.	Prepare the required connection materials suitable for the pressure and temperature range.
5.	Check the product for damage. Only use the product in an undamaged state.

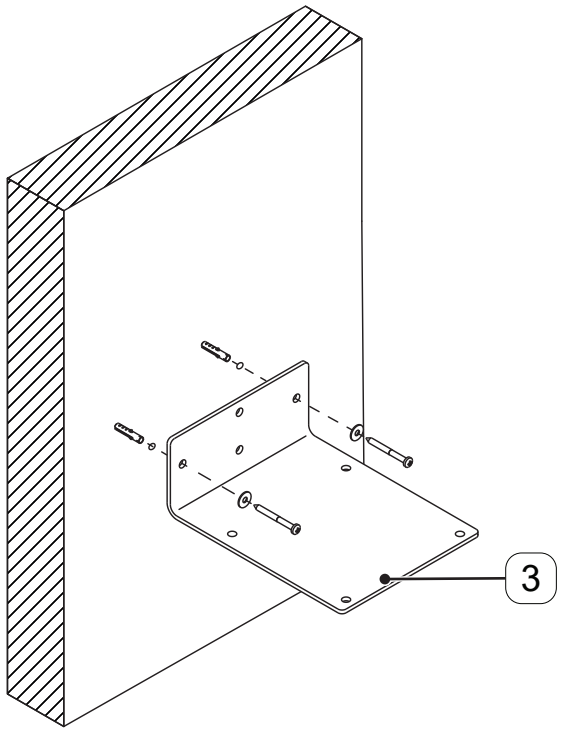
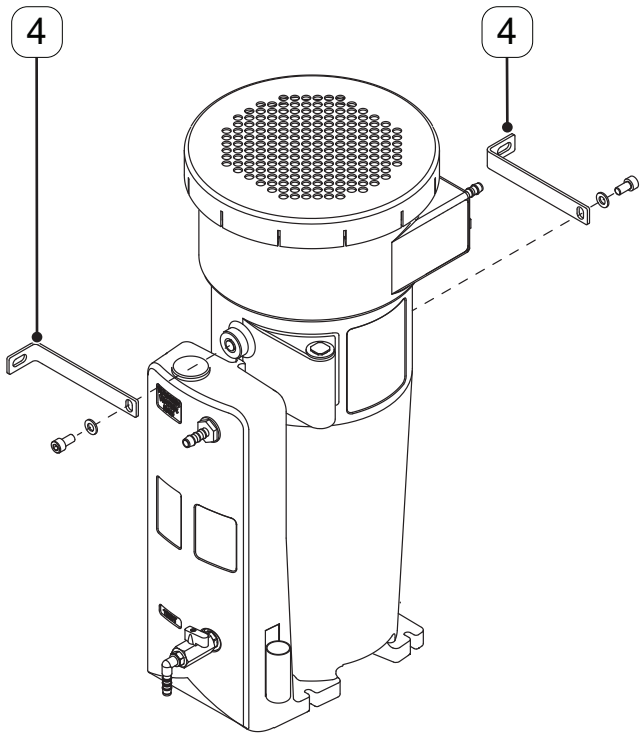
6.2.1 POWS 100

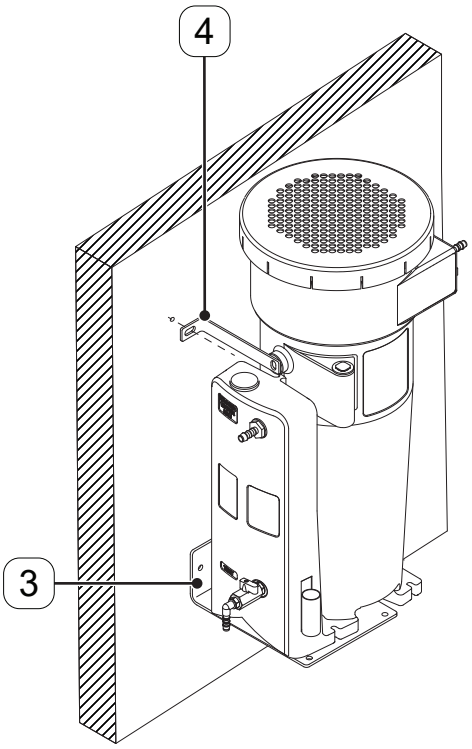
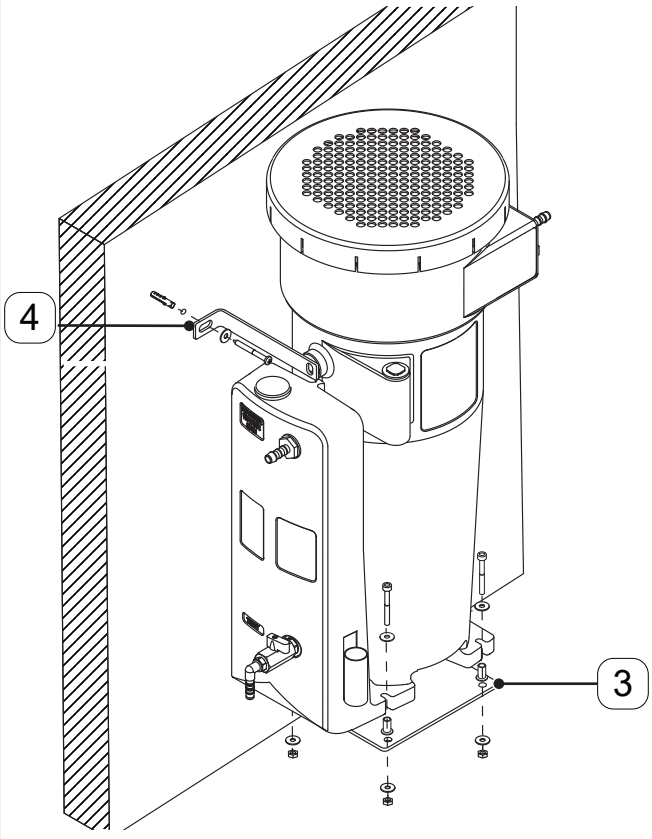
Installation work	
Figure	**Description / explanation**
	**Floor mounting** 1. Set up the **POWS** offset from the tapping point. 2. Mark the position of the 4 mounting-feet slot holes **[1]** on the mounting surface. 3. Put the **POWS** aside and drill holes at the marked locations. 4. Position the **POWS** over the drilled holes and level it. → Maximum tolerance ±1° 5. Fasten the **POWS** to the mounting surface using the fixing screws supplied. → Tighten the screws hand-tight.
	**Wall mounting** 1. Position the wall bracket **[4]** on the wall, offset from the tapping point. 2. Transfer the position of the holes in the wall bracket **[4]** to the wall and put the wall bracket **[4]** aside. 3. Drill holes at the marked locations and mount the wall bracket **[4]** on the wall using the fixing screws provided. 4. Level the wall bracket (±1°) and tighten the screws.

Installation work	
Figure	**Description / explanation**
	5. Line the mounting surface **[5]** of the POWS up with the wall bracket **[4]** and push the **POWS** so that it slides into place.
	6. Snap the retaining clip **[6]** into place.

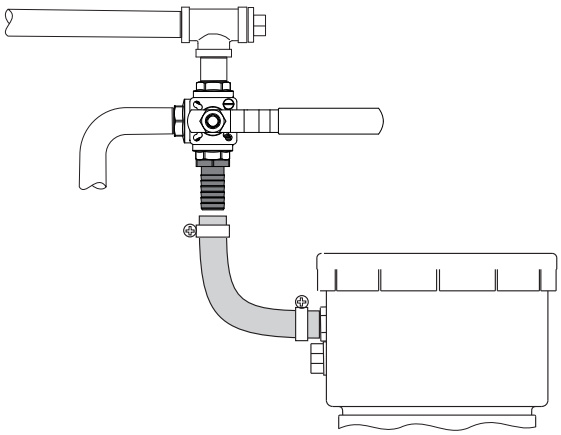
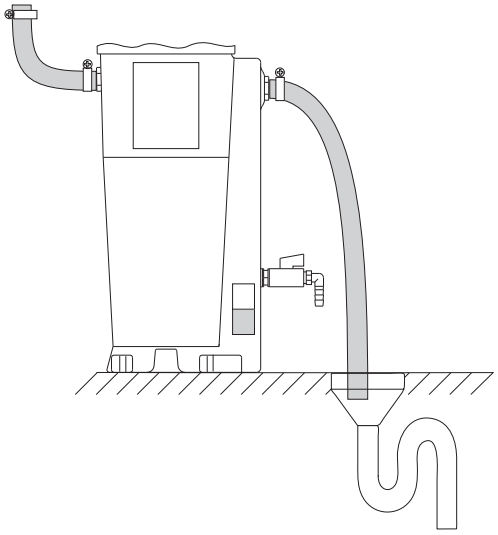
6.2.2 POWS 200

Installation work	
Figure	**Description / explanation**
	**Floor mounting** 1. Set up the **POWS** offset from the tapping point. 2. Mark the position of the 4 mounting-feet slot holes **[1]** on the mounting surface. 3. Put the **POWS** aside and drill holes at the marked locations. 4. Position the **POWS** over the drilled holes and level it. → Maximum tolerance ±1° 5. Fasten the **POWS** to the mounting surface using the fixing screws supplied. → Tighten the screws hand-tight.

Installation work	
Figure	**Description / explanation**
	**Wall mounting** 1. Transfer the position of the holes in the wall bracket **[3]** to the wall and put the wall bracket **[3]** aside. 2. Drill holes at the marked locations and mount the wall bracket **[3]** on the wall using the fixing screws provided. 3. Level the wall bracket **[3]** (±1°) and tighten the screws.
	4. Screw the side support brackets **[4]** onto the POWS.

Installation work	
Figure	**Description / explanation**
	5. Position the **POWS** on the wall bracket **[3]**. 6. Transfer the position of the holes in the side support brackets **[4]** to the wall and put the **POWS** aside. 7. Drill holes at the marked locations.
	8. Position the **POWS** on the wall bracket **[3]**. 9. Fasten the **POWS** to the wall bracket **[3]** using the screws as shown. 10. Fasten the side support brackets **[4]** to the wall using the screws as shown.

6.2.3 Connecting the POWS

Connection work	
Figure	**Description / explanation**
NOTICE 	**Damage due to incorrect hose routing.** Incorrect hose routing can result in material and environmental damage, as well as impaired operation. • Route all hoses in the shortest possible way. • Install all hoses in such a way that they are free of mechanical stress and without any kinks. • Lay all hoses in such a way that no mechanical stresses are transferred to the **POWS** and the minimum bending radii of the respective hose are observed. • Do not lay the hoses in a slack manner (sagging).
	11. Connect the tapping point with the condensate inlet of the pressure relief chamber with a hose and secure it against slipping with a hose clamp. → Do not lay the hose in a slack manner (sagging). → Tighten the hose clamps hand-tight.
	12. Attach a water outlet hose to the condensate outlet and secure it against slipping with a hose clamp. → Tighten the hose clamp hand-tight. 13. Route the water outlet hose with a steady slope and without any kinks to the connection to the wastewater system. 14. Position the water outlet hose so that it hangs loosely in the trap funnel at the wastewater connection.

Concluding work	
1.	Before pressurization, check all system connections for leak tightness and tighten if necessary.
2.	Slowly pressurize the system.

7. Commissioning

7.1 Warning notices

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before pressurization, check all system connections for leak tightness and tighten if necessary. • Slowly pressurize the system.

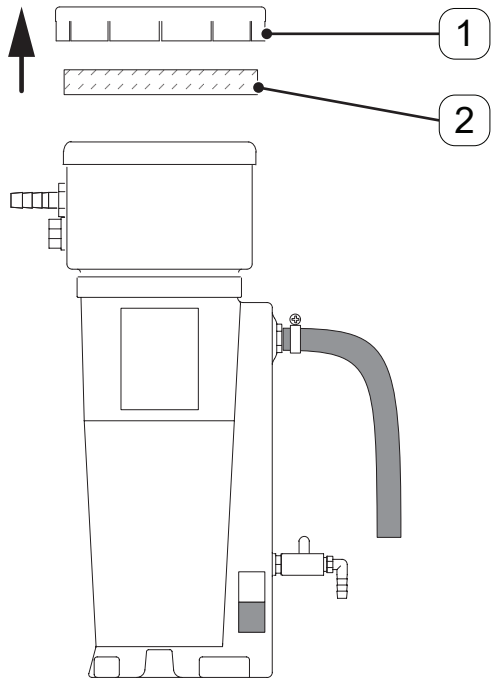
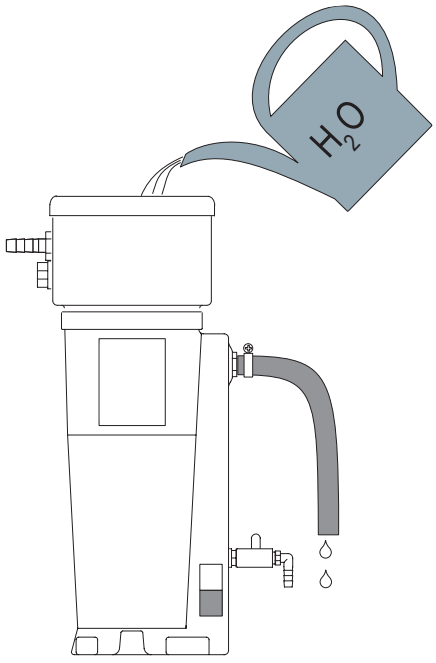
7.2 Commissioning work

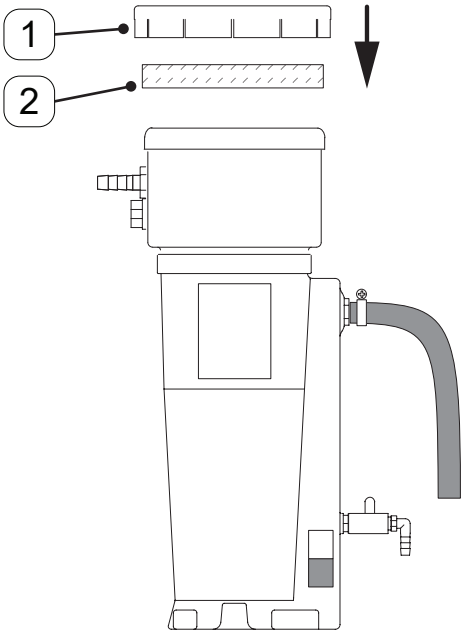
Personnel
Skilled technical personnel - pressure equipment and systems (see section “2.3 Target group and personnel” on page 8)

For commissioning work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tool necessary	• No material necessary	**To be worn at all times:** 

Preparatory work	
1.	The installation of the **POWS** is complete.

Commissioning work	
Figure	**Description / explanation**
	**Fill the POWS with fresh water** 1. Remove the cover **[1]**. 2. Take the filter mat **[2]** out of the pressure relief chamber.
	3. Fill the pressure relief chamber with tap water. → Stop filling it as soon as water comes out from the condensate outlet.

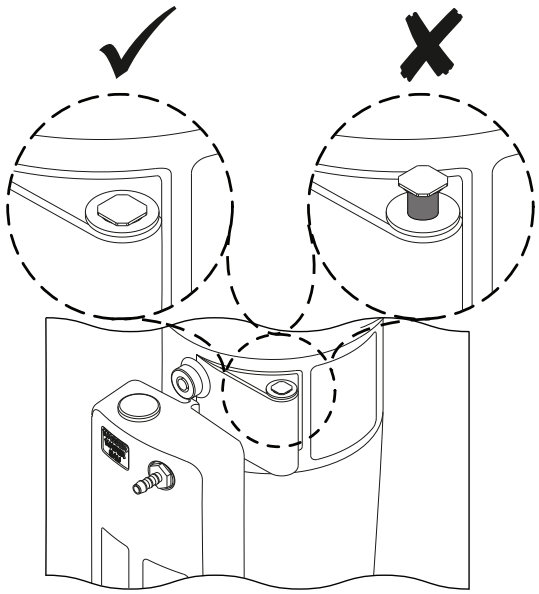
Commissioning work	
Figure	**Description / explanation**
	4. Put the filter mat **[2]** back in the pressure relief chamber **[7]**. 5. Put the cover **[1]** back on. 6. Slowly open the condensate feed. 7. Check all connections for leaks.

8. Operation

Personnel
Operating personnel (see section “2.3 Target group and personnel” on page 8)

Preparatory work	
1.	The **POWS** has been set up and connected to the condensate collection line and the drain.
2.	Commissioning of the **POWS** is complete.

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tool necessary	• No material necessary	**To be worn at all times:** 

Figure	Description
	**POWS 200** Check the level indicator. **The level indicator’s red marking is not visible:** → The **POWS** is working properly. **The level indicator’s red marking is visible:** → The pressure relief chamber’s maximum filling level has been reached. → The condensate flow has been disrupted.

9. Maintenance

9.1 Warning notices

DANGER	**Sudden escape of pressurized fluids**
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

CAUTION	**Improper cleaning and use of the wrong cleaning media!**
	Improper cleaning and the use of the wrong cleaning media result in minor injuries as well as damage to health and damage to property.
	• Only use warm water to remove stubborn dirt or deposits. • Never use abrasive or aggressive cleaning agent or solvents which could damage the outer coating (e.g. markings, type plate, corrosion protection, etc.). • Never clean the device with hard or pointed implements. • Use an anti-static, damp cloth for cleaning the outside. • Immediately replace any product markings (pictograms, markings) that have become illegible.

NOTICE	**Local hygiene regulations!**
	In addition to the cleaning instructions listed, any regionally applicable or company-specific hygiene regulations must be observed.

9.2 Maintenance schedule

Maintenance	**Interval**
Turbidity test of wastewater and documenting the result	• Weekly
Filter replacement	• Mandatory in case of a negative result of the turbidity test • If the level indicator's red marking is visible • At least annually
Basic cleaning of the **POWS**	• Annually • At every filter replacement
Visual inspection	• Weekly
Leak test	• Recommendation: After all installation and maintenance work on the product

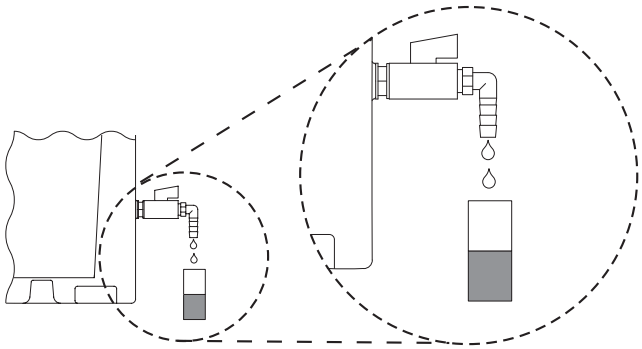
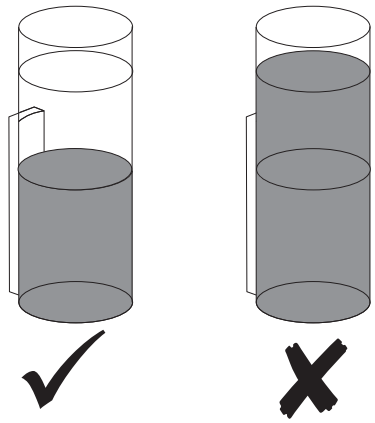
9.3 Maintenance work

Personnel
Qualified service technicians (see section “2.3 Target group and personnel” on page 8)

For maintenance work to be carried out, the following prerequisites must be fulfilled and the respective preparatory tasks must have been completed.

9.3.1 Turbidity test of the purified condensate

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tool necessary	• No material necessary	**To be worn at all times:** 

Figure	Description
	1. Remove the reference turbidity tube from the holder and fill it with a water sample from the service valve.
	2. Compare the sample with the reference turbidity on the lower half of the reference turbidity tube. **The sample is clearer than the reference turbidity:** → The **POWS** is working properly. **The sample is equally or more turbid than the reference turbidity** → Replace the filter. 3. Document the result of the turbidity test.

9.3.2 Filter replacement and cleaning

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tool necessary	• Filter element kit	**To be worn at all times:** 

Preparatory work	
1.	Have the new filter element kit **[6]** available.

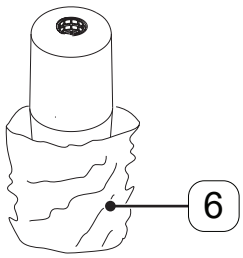
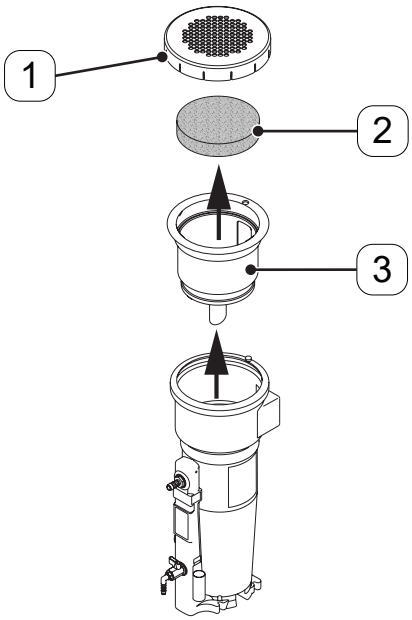
Figure	Description
	1. If the product has a built-in heating system, disconnect the heating system from the power supply. 2. Cut off the condensate feed to the **POWS** and divert the condensate into a separate container. 3. Have the new filter element kit **[6]** available. → Keep the PE bag that the kit came with so that it can be used for disposal of the used filter element.
	4. Open the cover **[1]**. 5. Remove the filter mat **[2]**. 6. Remove the pressure relief chamber and feed pipe **[3]**.

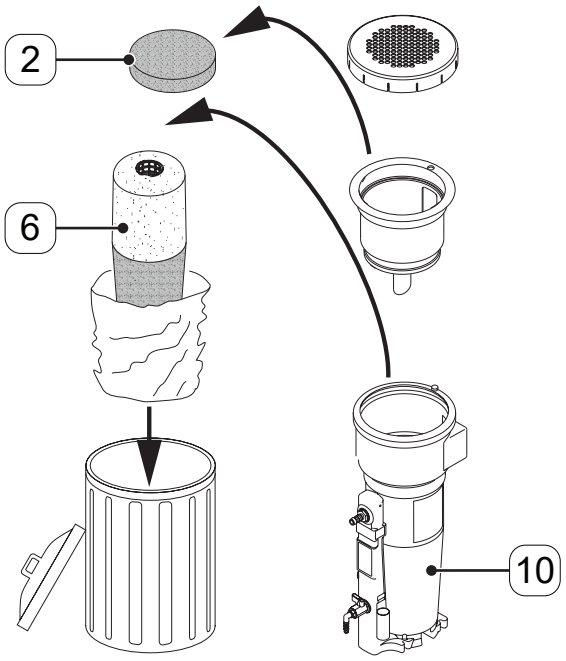
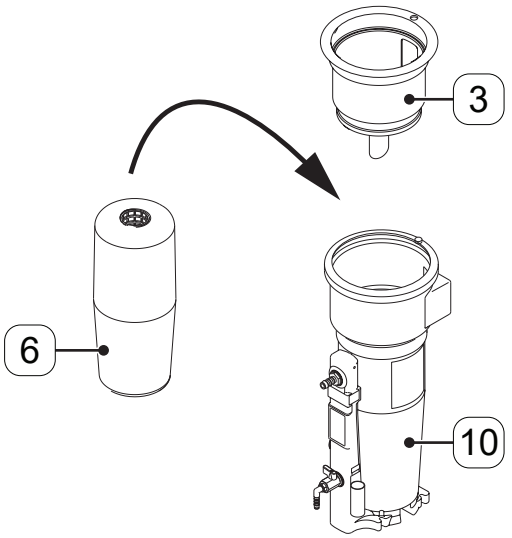
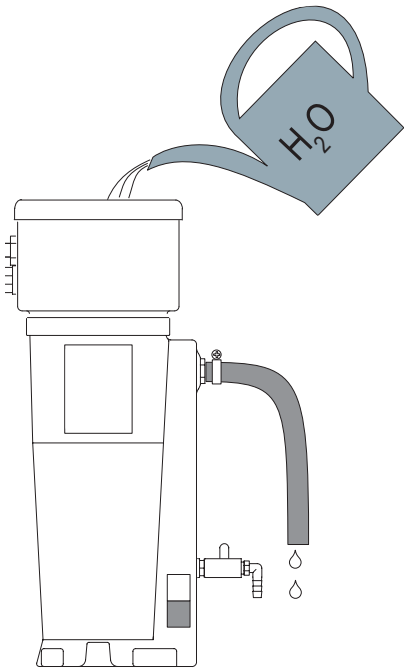
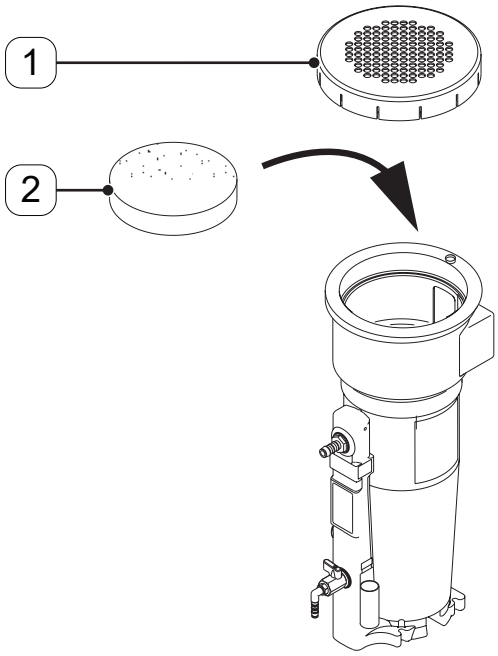
Figure	Description
	7. Slowly pull the used filter element **[6]** out of the container **[10]** and allow it to drain. 8. Place the drained filter element **[6]** and the used filter mat **[2]** in the PE bag and dispose of them properly (see section “13. Disposal” on page 58). 9. Pump the container **[10]** empty. → Collect and dispose of the liquid waste in accordance with locally applicable legal requirements and regulations. 10. Clean the container **[10]**.
	11. Insert the new filter element **[6]** into the filter seat of the container **[10]**. 12. Insert the pressure relief chamber and feed pipe **[3]**.

Figure	Description
	13. Fill the pressure relief chamber with tap water. → Stop filling it as soon as water comes out from the condensate outlet.
	14. Insert the new filter mat **[2]** into the pressure relief chamber. 15. Put the cover **[1]** back on. 16. Slowly open the condensate feed. 17. Check all connections for leaks. 18. If the product has a built-in heating system, reconnect the heating system to the power supply.

9.3.3 Visual inspection

During the visual inspection, check all components for mechanical damage and leaks. Replace damaged components immediately.

9.3.4 Leak test

A leak test is only possible if the **POWS** is completely filled with water.

1. Fill the pressure relief chamber with tap water.

→ Stop filling it as soon as water comes out from the condensate outlet.

2. Check all hose and other connections for leaks.

Error or fault pattern	Measure
Leaky hose connection	• Tighten the hose clamp. • Replace hardened hose and respective hose clamps.

9.3.5 Concluding work

Concluding work	
1.	Before pressurization, check all system connections for leak tightness and tighten if necessary.
2.	Slowly pressurize the system.

10. Consumables, accessories and spare parts

10.1 Order information

Manufacturer's customer service requires the following information for an inquiry or order:

- Product name and installation size (see type plate)
- Serial number (see type plate)
- Material number and designation of the accessory
- Required quantity of accessories to be delivered

The contact details of the relevant manufacturer's customer service departments are listed in chapter "1.1 Contact" on page 4.

10.2 Wear parts

Designation	Material number	
	POWS 100	POWS 200
Filter element kit • Filter element • Filter mat	On request	On request
Set of seals	On request	On request

10.3 Accessories

Designation	Material number	
	POWS 100	POWS 200
Heating system	-	On request
Alarm sensor for level indicator	-	On request

10.4 Spare parts

Designation	Material number	
	POWS 100	POWS 200
Container	On request	On request
Pressure relief chamber with feed pipe	On request	On request
Filter mat and cover	On request	On request
Cover	On request	On request
Wall bracket	On request	On request
Level indicator	-	On request
Reference turbidity tube 20 mg/l	On request	
Reference turbidity tube 10 mg/l	On request	
Reference turbidity tube 5 mg/l	On request	
Service valve	On request	

11. Taking the product out of operation

The **POWS** must be taken out of operation during longer periods of standstill, for example in the case of:

- Repairs to the product or accessories
- Longer standstill of the entire system due to planned work (e.g. conversion work, major repairs, decommissioning of the overall system)

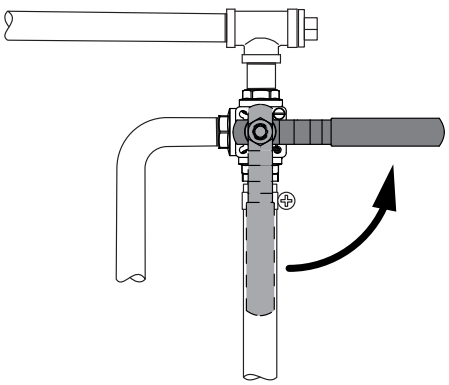
11.1 Warning notices

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

11.2 Taking the product out of operation

Personnel
Qualified service technicians (see section “2.3 Target group and personnel” on page 8)

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tool necessary	• No material necessary	**To be worn at all times:** 

Figure	Description / explanation
	1. Cut off the condensate feed to the **POWS** and divert the incoming condensate into a separate container.

12. Uninstallation

12.1 Warning notices

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

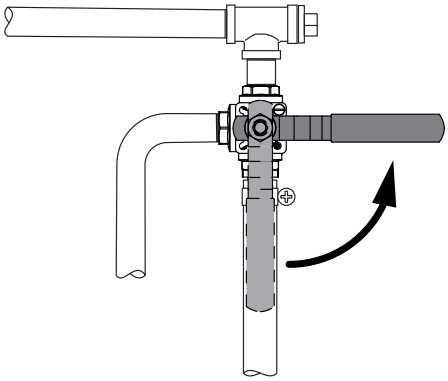
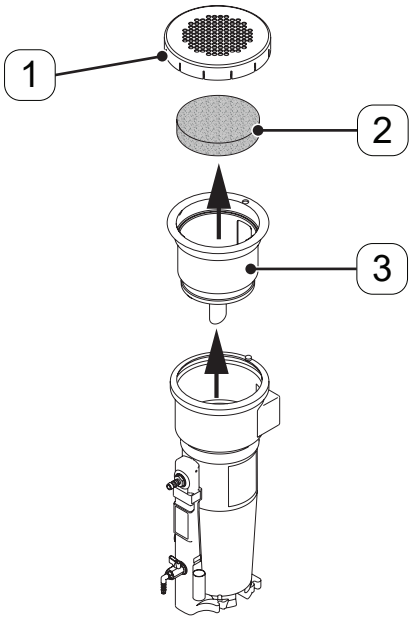
12.2 Uninstallation work

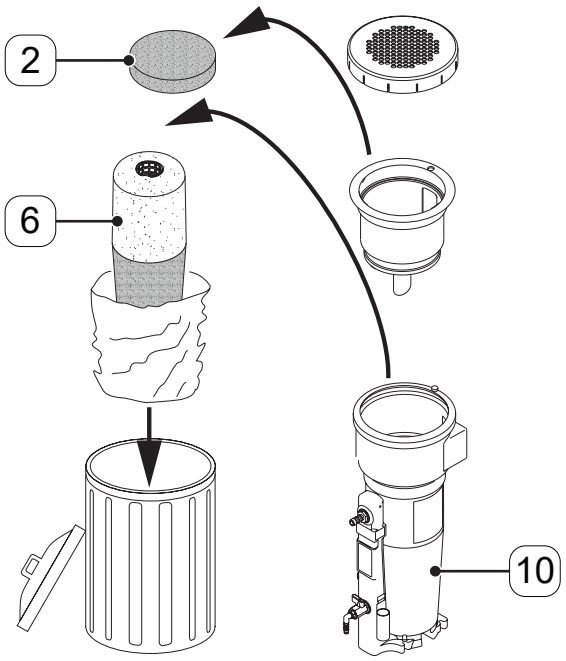
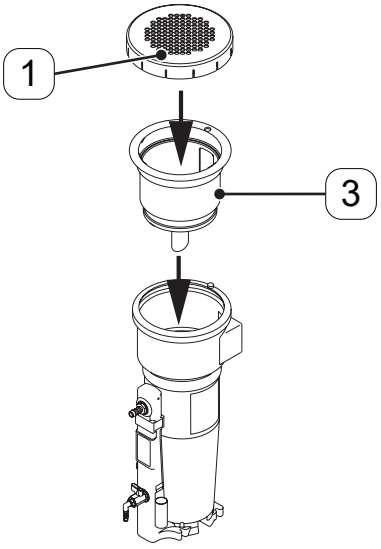
Personnel
Qualified service technicians (see section “2.3 Target group and personnel” on page 8)

Preparatory work	
1.	The **POWS** has been taken out of operation.

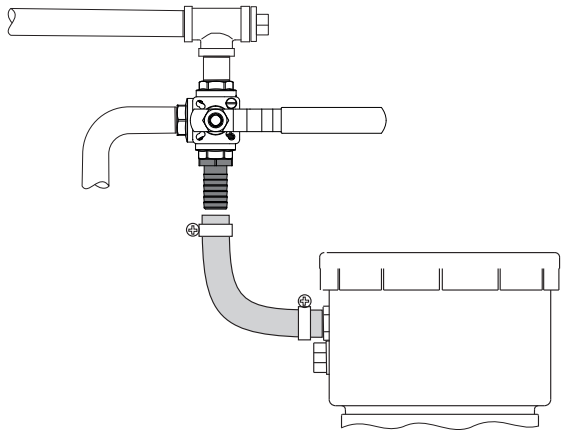
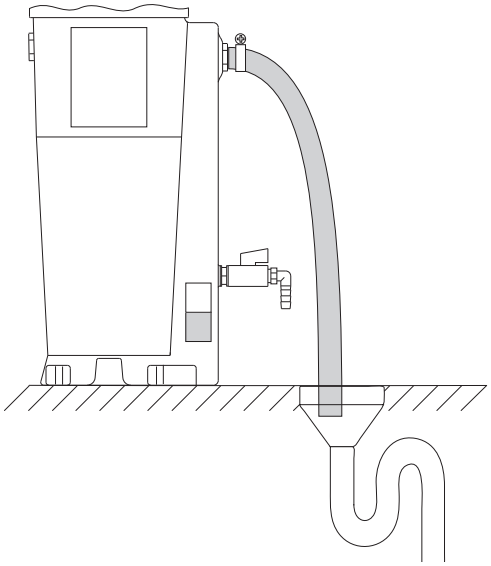
Prerequisites		
Tools	**Material**	**Protective equipment**
• Adjustable wrench • Water pump pliers	• Packaging for disposal of the used filter element.	**To be worn at all times:** 

12.2.1 Removing the filter element

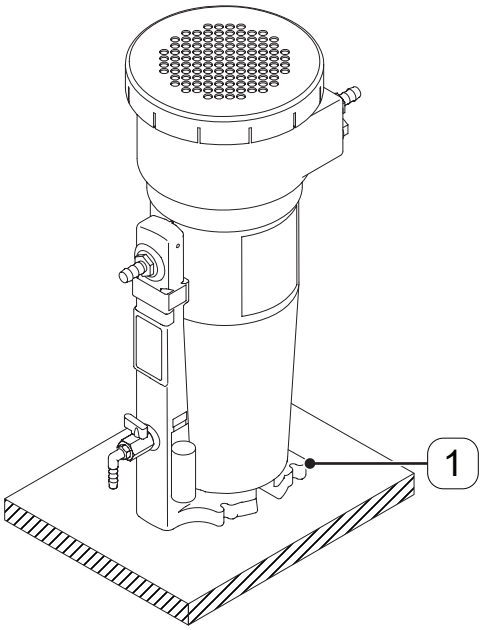
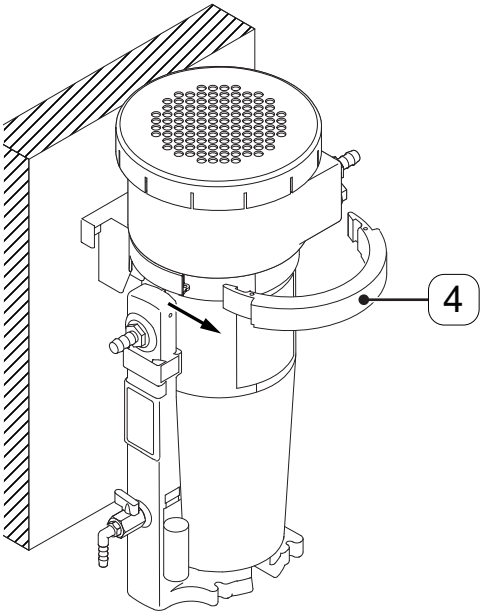
Uninstallation work	
Figure	**Description / explanation**
	1. Cut off the condensate feed to the **POWS** and divert the incoming condensate into a separate container.
	2. Open the cover **[1]**. 3. Remove the filter mat **[2]**. 4. Remove the pressure relief chamber and feed pipe **[3]**.

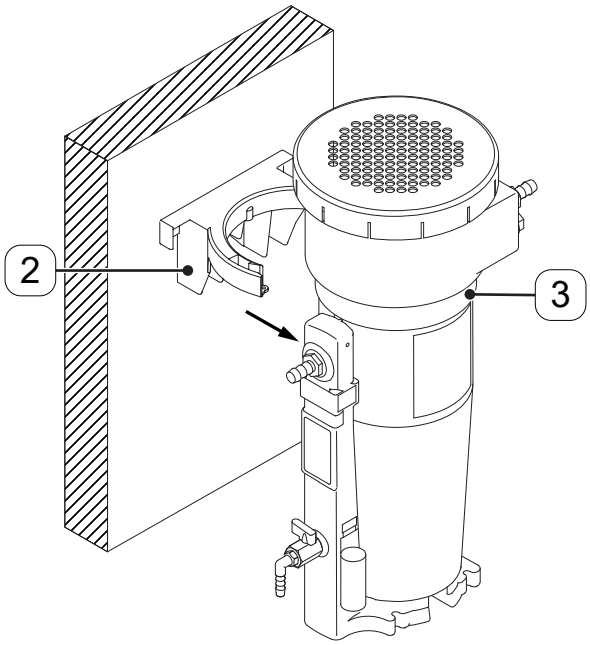
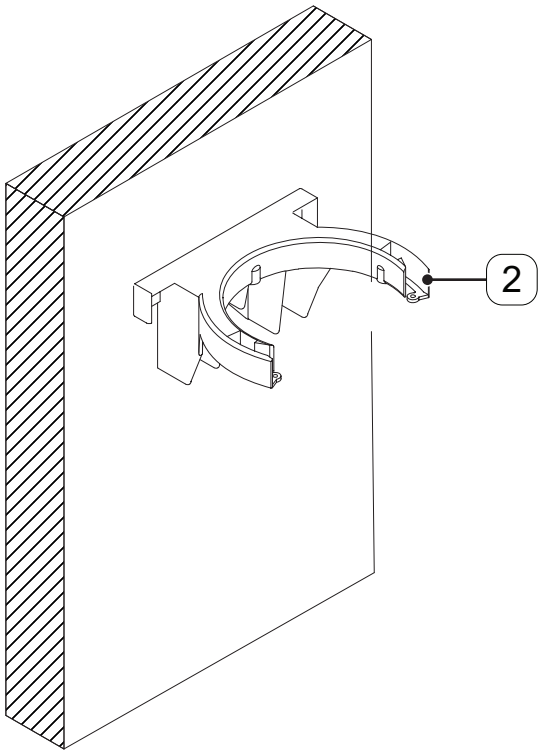
Uninstallation work	
Figure	**Description / explanation**
	5. Slowly pull the used filter element **[6]** out of the container **[10]** and allow it to drain. 6. Place the drained filter element **[6]** and the used filter mat **[2]** in the PE bag and dispose of them properly (see section “13. Disposal” on page 58). 7. Pump the container **[10]** empty. → Collect and dispose of the liquid waste in accordance with locally applicable legal requirements and regulations. 8. Clean the container **[10]**.
	9. Insert the pressure relief chamber and feed pipe **[3]**. 10. Close the cover **[1]**.

12.2.2 Disconnecting the POWS

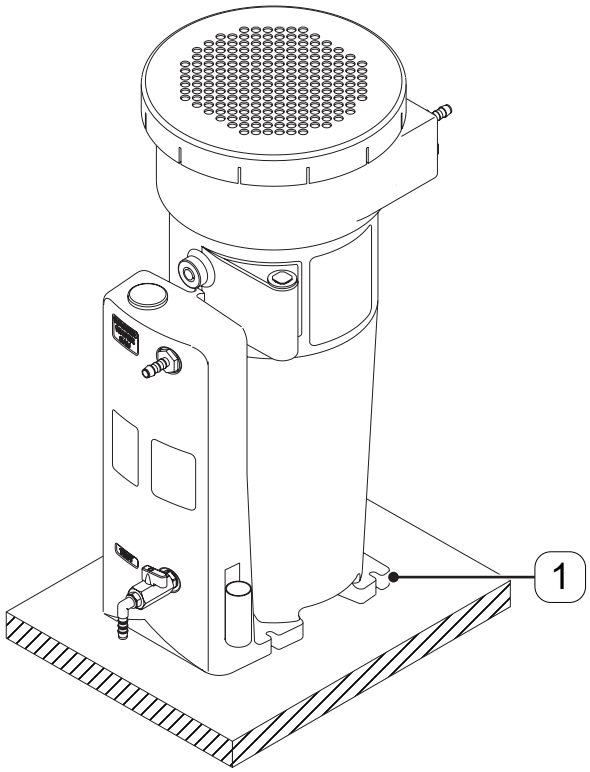
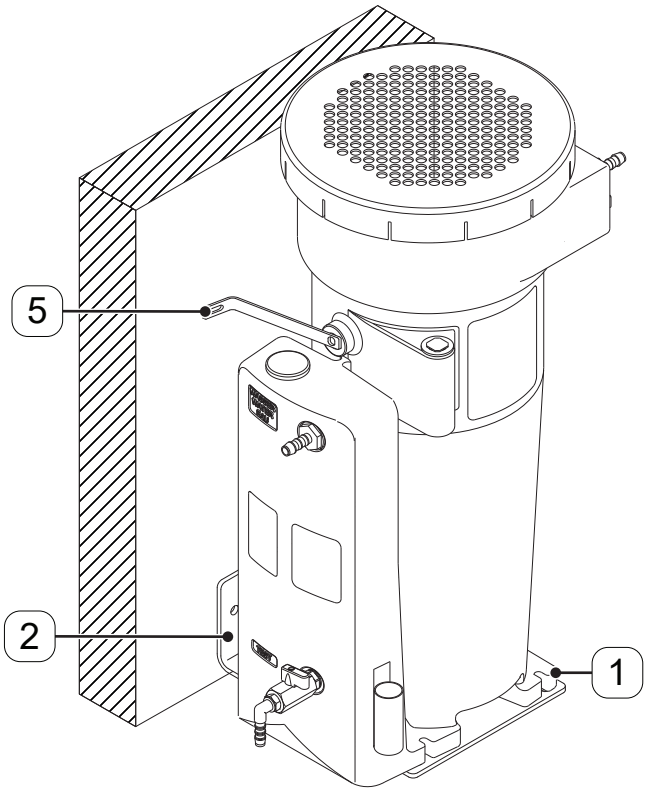
Installation work	
Figure	**Description / explanation**
	11. Loosen the hose clamps at the tapping point and on the pressure relief chamber condensate inlet. 12. Disconnect the hose from the pressure relief chamber and from the tapping point.
	13. Loosen the hose clamp on the condensate outlet and disconnect the water outlet hose.

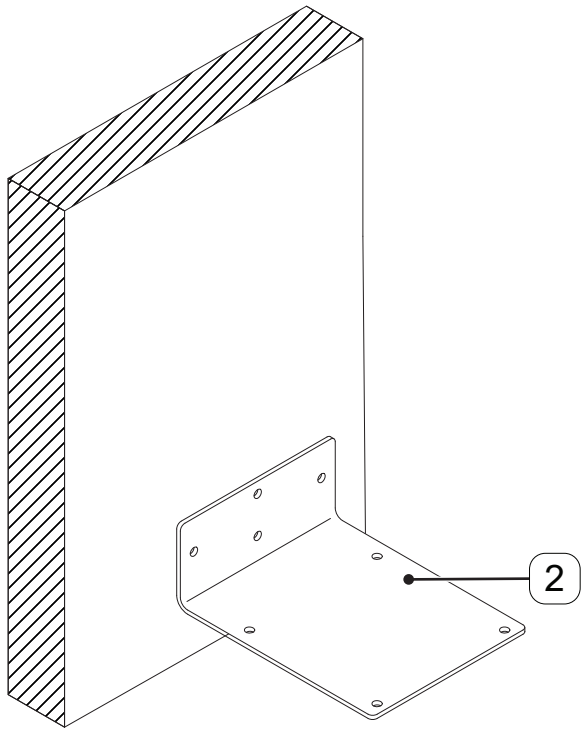
12.2.3 Uninstalling the POWS 100

Uninstallation work	
Figure	**Description / explanation**
	**Floor mounting** 1. Unscrew and remove the screws from the mounting feet **[1]**. 2. Dispose of the uninstalled **POWS** properly (see section “13. Disposal” on page 58).
	**Wall mounting** 1. Remove the retaining clip **[4]**.

Uninstallation work	
Figure	**Description / explanation**
	2. Pull the **POWS** out of the wall bracket **[2]**.
	3. Unscrew and remove the screws from the wall bracket **[2]**. 4. Remove the wall bracket **[2]** from the wall. 5. Dispose of the uninstalled **POWS** and the wall bracket **[2]** properly (see section “13. Disposal” on page 58).

12.2.4 Uninstalling the POWS 200

Uninstallation work	
Figure	**Description / explanation**
	**Floor mounting** 1. Unscrew and remove the screws from the mounting feet **[1]**. 2. Dispose of the uninstalled **POWS** properly (see section “13. Disposal” on page 58).
	**Wall mounting** 1. Unscrew and remove the screws attaching the side support brackets **[5]** to the wall. 2. Unscrew and remove the screws attaching the side support brackets **[5]** to the **POWS**. 3. Unscrew and remove the screws from the mounting feet **[1]**. 4. Lift the **POWS** off the wall bracket **[2]**.

Uninstallation work	
Figure	**Description / explanation**
	5. Remove the screws from the wall bracket **[2]**. 6. Remove the wall bracket **[2]** from the wall. 7. Dispose of the uninstalled components properly (see section “13. Disposal”).

13. Disposal

At the end of their useful life the product and the accessories must be sent for disposal e.g. by a specialist company. Materials such as glass, plastics and some chemical compounds are mostly recoverable, reusable or recyclable.

13.1 Warning notices

NOTICE	**Improper disposal!**
	Improper disposal of parts, components, operating and auxiliary materials as well as cleaning media can cause environmental damage.
	• Dispose of all components, parts, operating and auxiliary materials as well as cleaning agents professionally and in accordance with all locally applicable legal requirements and regulations. • Dispose of electrical and electronic components through a specialist waste disposal company or return to **Sullivan-Palatek**. • In case of doubt, consult a local disposal company before disposal.

13.2 Disposal of operating and auxiliary materials

Operating material / auxiliary material	EU waste code
Adsorption materials, filter materials, cleaning wipes and protective clothing - contaminated by oils or other hazardous substances	15 02 02
Packaging - paper and cardboard	15 01 01
Packaging - plastic material	15 01 02
Waste oil - mineral	13 02 05
Waste oil - synthetic	13 02 06

13.3 Disposal of components

Ensure the following prerequisites are met before disposal:

Prerequisites	
1.	The product and the accessories have been taken out of operation and disassembled.
2.	The product and the accessories have been cleaned and any fluid residue has been removed from them.

Components	EU waste code
Plastic material	20 01 39
Metals	20 01 40

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