

Original installation and operation manual

ÖWAMAT®

> 10

> 11

■ Table of contents

1. Notes about the documentation	4
1.1 Contact	4
1.2 Information regarding installation and operation manual	4
1.3 Other applicable documents	5
2. Safety.....	6
2.1 Use	6
2.1.1 Intended use.....	6
2.1.2 Reasonably foreseeable inappropriate use.....	7
2.2 Responsibility of the operating company	7
2.3 Target group and personnel.....	8
2.4 Explanation of the safety symbols used.....	9
2.5 Safety instructions and warning notices.....	10
2.5.1 Basic safety instructions.....	10
2.5.2 Safe operation.....	10
2.5.3 Sudden escape of pressurised fluids	11
2.5.4 Transport and storage.....	11
2.5.5 Installation.....	12
2.5.6 Maintenance	12
2.5.7 Handling hazardous substances	13
2.5.8 Use of spare parts, accessories or materials	13
2.6 Warning notices	14
3. Product information	16
3.1 Product overview	16
3.1.1 ÖWAMAT® 10.....	16
3.1.2 ÖWAMAT® 11.....	18
3.2 Function description	20
3.2.1 ÖWAMAT® 10 / 11	20
3.3 Scope of delivery	21
4. Technical data	22
4.1 Operating parameters	22
4.2 Storage parameters.....	22
4.3 Materials.....	22
4.4 Dimensions.....	23
4.4.1 ÖWAMAT® 10.....	23
4.4.2 ÖWAMAT® 11.....	24
4.5 Connections.....	25
4.6 Installation conditions	26
5. Transport and storage.....	27
5.1 Warning notices	27
5.2 Transport	28
5.3 Storage.....	28


6. Assembly	29
6.1 Warning notices	29
6.2 Installation Work	30
6.2.1 ÖWAMAT® 10	31
6.2.2 ÖWAMAT® 11	33
6.2.3 Connecting the ÖWAMAT®	36
7. Commissioning	37
7.1 Warning notices	37
7.2 Commissioning work	37
8. Operation	40
9. Maintenance	41
9.1 Warning notices	41
9.2 Maintenance schedule	41
9.3 Maintenance work	42
9.3.1 Turbidity test of the purified condensate	42
9.3.2 Filter replacement and cleaning	43
9.3.3 Visual inspection	46
9.3.4 Leakage test	46
9.3.5 Concluding work	46
10. Consumables, accessories and spare parts	47
10.1 Order information	47
10.2 Wear parts	47
10.3 Accessories	47
10.4 Spare parts	48
11. Taking the product out of operation	49
11.1 Warning notices	49
11.2 Decommissioning work	49
12. Dismounting	50
12.1 Warning notices	50
12.2 Dismounting work	50
12.2.1 Removing the OEKOSORB® filter element	51
12.2.2 Disconnecting the ÖWAMAT®	53
12.2.3 Uninstalling the ÖWAMAT® 10	54
12.2.4 Uninstalling the ÖWAMAT® 11	56
13. Disposal	58
13.1 Warning notices	58
13.2 Disposal of operating and auxiliary materials	58
13.3 Disposal of components	58

1. Notes about the documentation


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

1.1 Contact

Manufacturer	Customer service and tools
BEKO TECHNOLOGIES GmbH Im Taubental 7 41468 Neuss Phone: +49 2131 988-1000 info@beko-technologies.com www.beko-technologies.com	BEKO TECHNOLOGIES GmbH Im Taubental 7 41468 Neuss Phone: +49 2131 988-1000 service-eu@beko-technologies.com www.beko-technologies.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 operation manual

INFORMATION	Copyright protection!
	The contents of the installation and operation 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 authorised.

Publication date	Revision	Version	Reason for amendment	Scope of amendment
21 November 2023	00	00	Editorial changes	New document

The installation and operation 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.

NOTE	Follow the instructions given in 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 contains all the necessary steps for installation and operation of **ÖWAMAT®** unit.

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

- Instruction leaflet on filter replacement
- Installation and operation manual for heating system (**ÖWAMAT® 11**)

2. Safety

2.1 Use

2.1.1 Intended use

The **ÖWAMAT®**, also referred to as the “product” below, is used to treat compressor condensate 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, oxidising 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 piping 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, disassembly and disposal work described may only be performed by qualified skilled technical personnel.

2.1.2 Reasonably foreseeable inappropriate use

Reasonably foreseeable inappropriate use 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 behaviour.

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!
	<ul style="list-style-type: none"> • 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 recognise 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 recognise 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 - pressure equipment and systems

Skilled technical personnel specialising 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 pressurised 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 pressurised systems.

Skilled technical personnel - customer service

Skilled technical personnel - customer service are people who have the skills and qualifications of the skilled personnel definitions named above. Skilled technical personnel - customer service must have documented proof of training for all work on the product and be authorised.

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)
	Pressurised system
	Read and follow the installation and operation 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 minimise the risk of personal injury and damage to property 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-energise 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
- Unauthorised interference and unauthorised 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 assembly conditions and the ambient conditions.
- Adhere to the maintenance intervals.

2.5.3 Sudden escape of pressurised fluids

The following situations may result in serious injury or death:

- Contact with fast or suddenly escaping fluids
- Bursting system parts
- Whipping of pressurised hoses and pipes

For the safe handling of pressurised 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 pressurised again.
- Check the pressurised system or system section for safety, contamination and possible damage.
- Before pressurisation, 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

Inappropriate transport or storage may result in personal injury or damage to property.

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

- Use personal protective equipment during 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

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

For safe assembly 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

Inappropriate completion of maintenance and repair work may result in serious personal injuries or death.

For safe maintenance and repairs, observe the following:

- Before starting work, depressurise the pressurised product and accessories and secure them against unintentional pressurisation.
- 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 damage to property 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
	<ul style="list-style-type: none"> Measures to prevent the danger

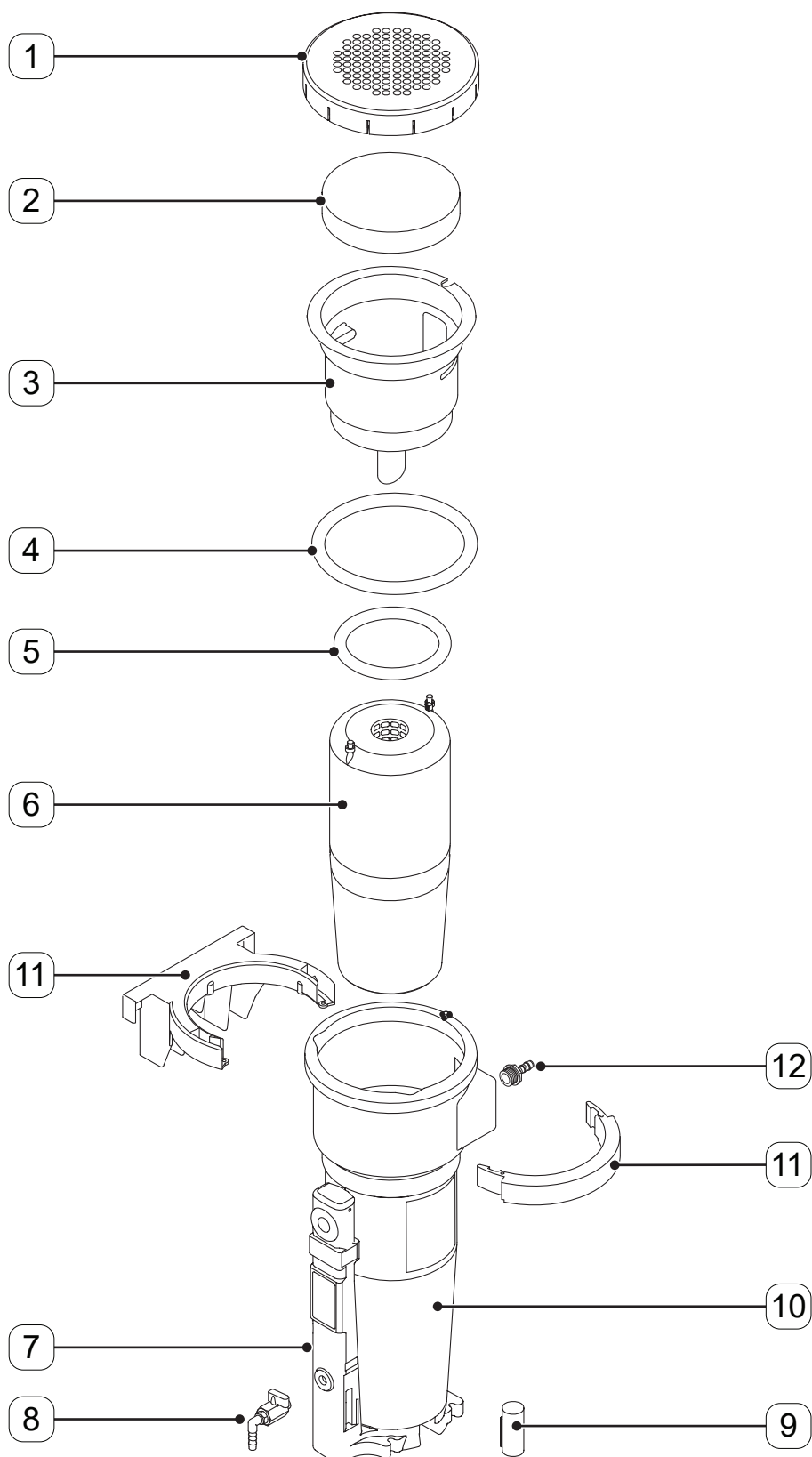
Signal words:

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
NOTE	Additional notes 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

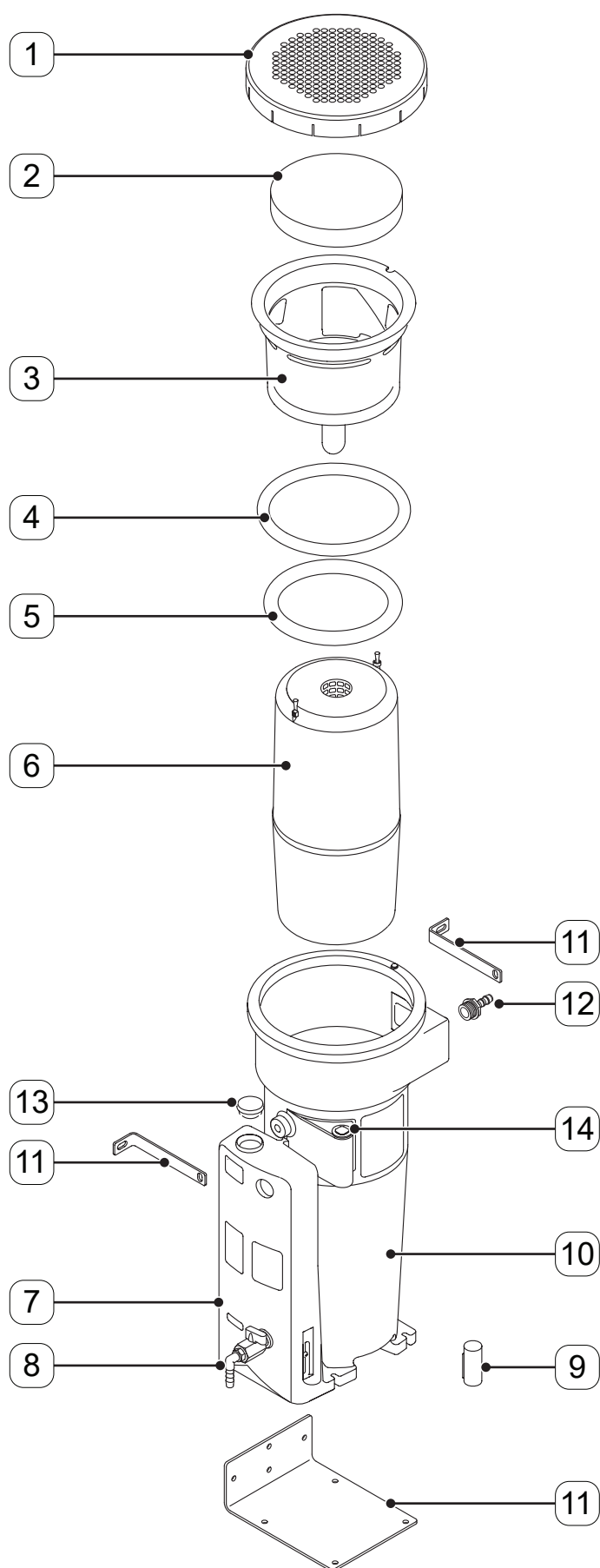
3.1 Product overview

3.1.1 ÖWAMAT® 10



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

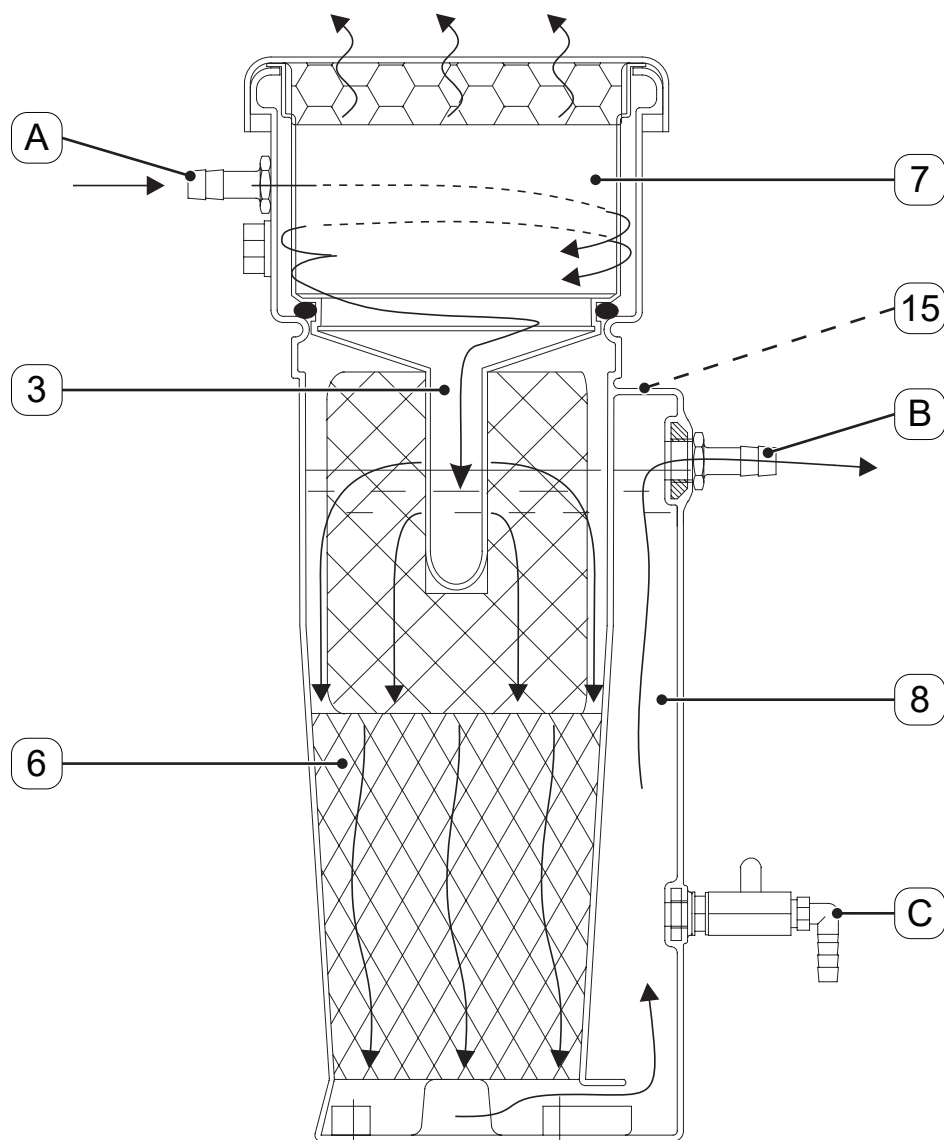
3.1.2 ÖWAMAT® 11



No.	Description / explanation
[1]	Cover
[2]	Filter mat
[3]	Pressure relief chamber with feed pipe
[4]	Cord packing
[5]	Cord packing
[6]	OEKOSORB® 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

3.2 Function description

3.2.1 ÖWAMAT® 10 / 11



No.	Description / explanation
[A]	Condensate inlet
[B]	Condensate outlet
[C]	Service valve
[3]	Feed pipe

No.	Description / explanation
[6]	OEKOSORB® filter element
[7]	Pressure relief chamber
[8]	Riser duct
[15]	Level indicator (ÖWAMAT® 11), 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 **OEKOSORB®** filter element **[6]**.

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

The condensate flows through the **OEKOSORB®** 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.

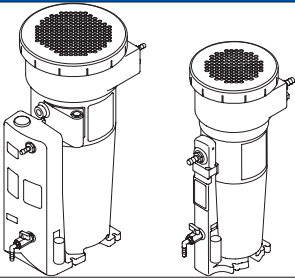
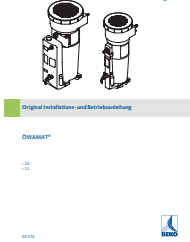
If the **OEKOSORB®** filter element **[6]** becomes saturated with oil, it will need to be replaced (see section “9.3.2 Filter replacement and cleaning” on page 43).

A level indicator **[15]** is integrated into the pressure relief chamber **[7]** of the **ÖWAMAT® 11**. 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 **ÖWAMAT®**.

Illustration	Description / explanation
	<p>ÖWAMAT® 10/11 including wall bracket and fixing materials.</p>
	<p>Original installation and operation manual</p>

4. Technical data

4.1 Operating parameters

Parameter	ÖWAMAT®	
	10	11
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 drain port	20 mg/l 20 ppm	

4.2 Storage parameters

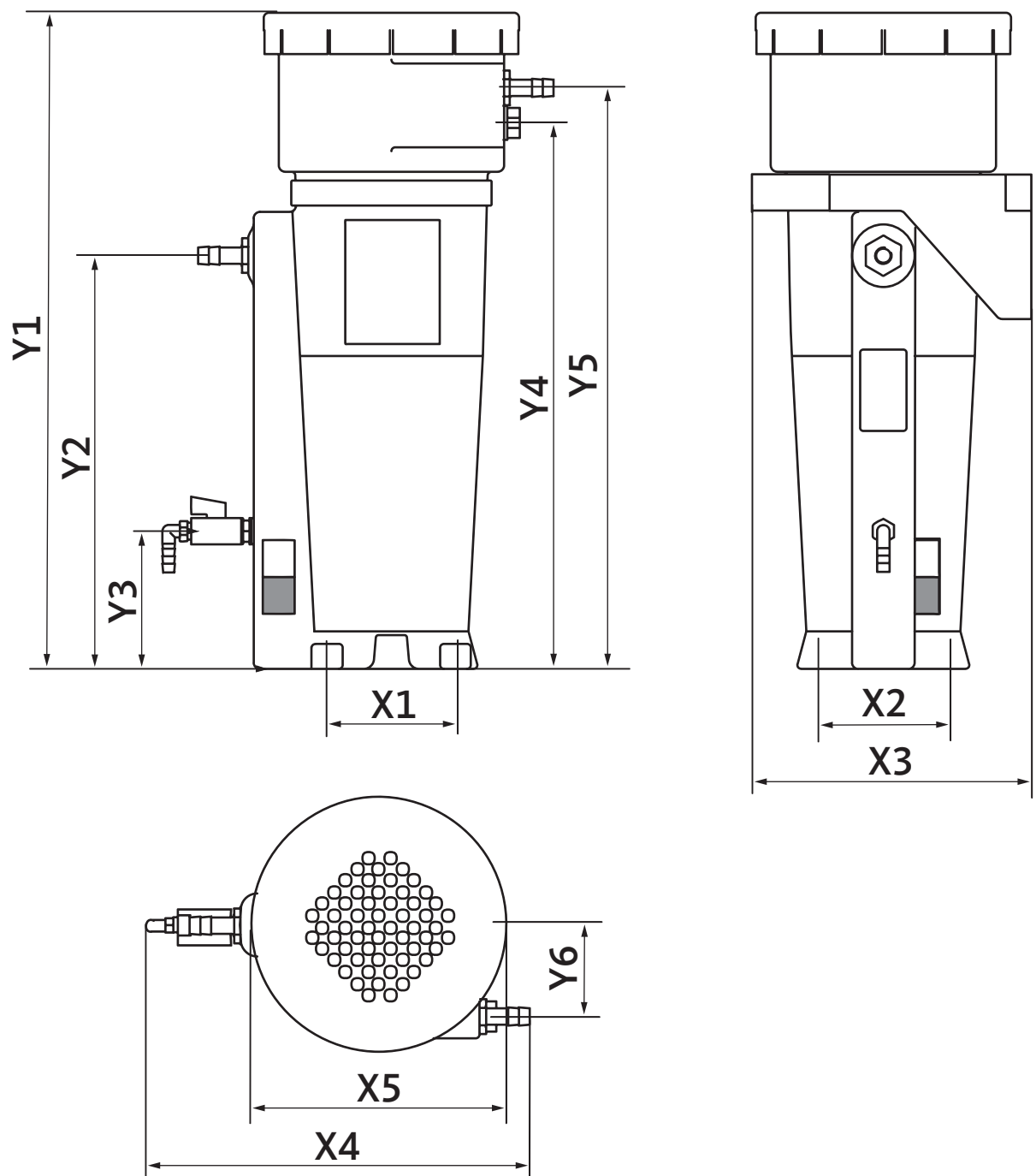
Parameter	ÖWAMAT®	
	10	11
Minimum / maximum temperature	+5 °C ... +60 °C (+33.8 °F ... +140 °F)	
Relative ambient air humidity	≤10 ... 80 %, without condensation	
Empty weight	3.5 kg 7.72 lbs	5.75 kg 12.68 lbs

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

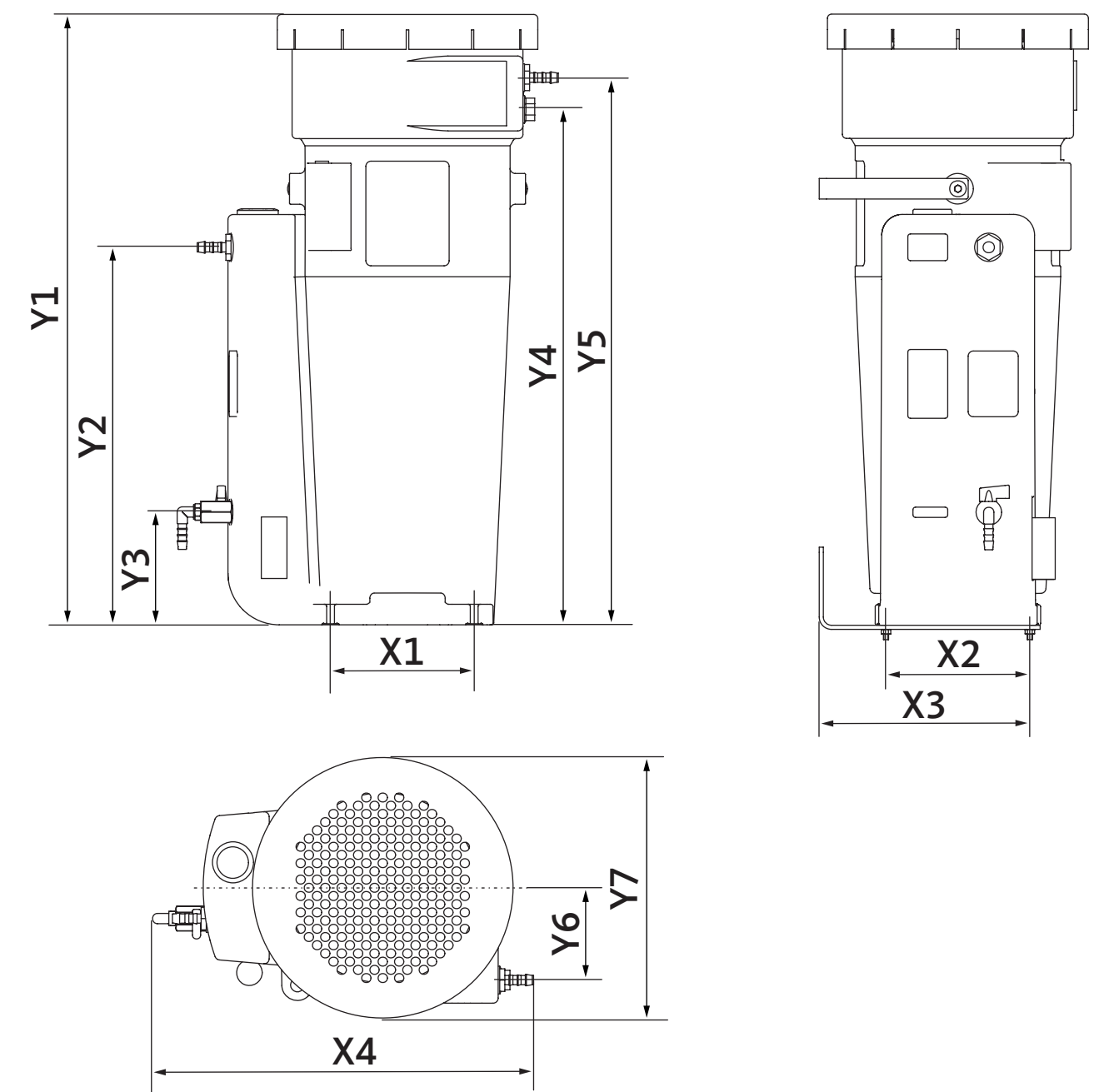
4.4.1 ÖWAMAT® 10



No.	[mm]	[in]
[X1]	100	3937
[X2]	100	3937
[X3]	222	8.74
[X4]	290	11417
[X5]	200	7874
[Y1]	528	20787

No.	[mm]	[in]
[Y2]	330	12992
[Y3]	110	4331
[Y4]	433	17047
[Y5]	464	41.93
[Y6]	70	18268

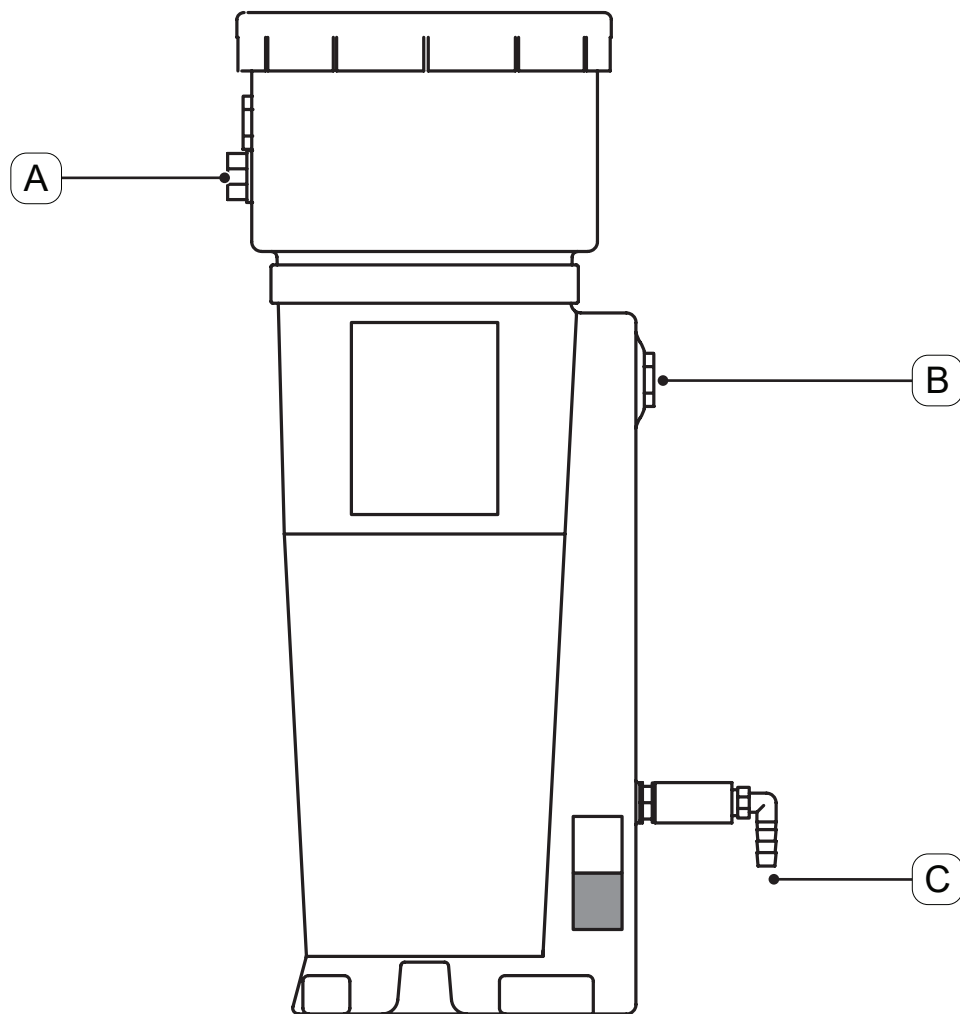
4.4.2 ÖWAMAT® 11



No.	[mm]	[in]
[X1]	140	5512
[X2]	140	5512
[X3]	205	8071
[X4]	387	15236
[Y1]	604	23.78
[Y2]	368	14488

No.	[mm]	[in]
[Y3]	110	4331
[Y4]	503	19803
[Y5]	534	21024
[Y6]	90	3543
[Y7]	254	10

4.5 Connections

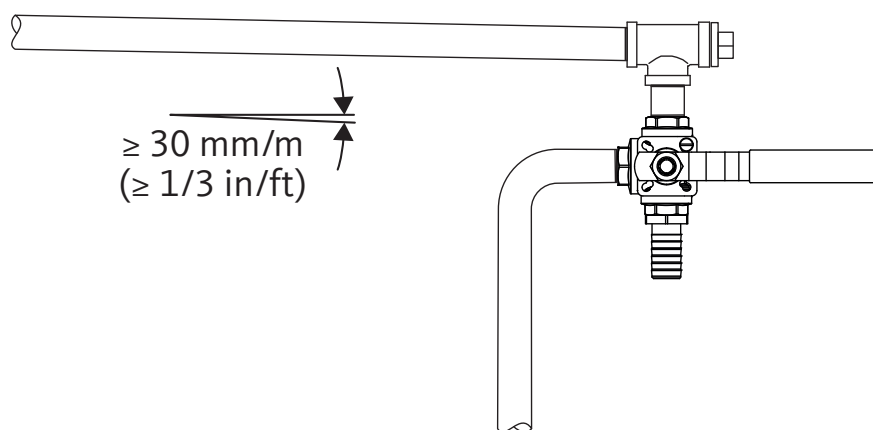


No.	Connection	Quantity	Description / explanation
[A]	G1/2" (dia. = 10 mm)	2	Hose connection, connection for the condensate inlet
[B]	G1/2" (dia. = 10 mm)	1	Hose connection, connection for draining the purified condensate
[C]	12 mm (0.47 in)	1	Service valve with elbow connector

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 **ÖWAMAT®** (refer to 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" ($\varnothing = 25$ 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 **ÖWAMAT®**.
- Install a P-trap with a waste funnel inlet at the wastewater connection in order to prevent unpleasant odours. 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	Inappropriate transport or storage!
 	<p>Inappropriate transport or storage may result in personal injury or damage to the device.</p> <ul style="list-style-type: none"> • Use personal protective equipment during 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.
NOTE	Handling packaging material!
	<p>Inappropriate disposal of packaging materials can cause environmental damage.</p> <ul style="list-style-type: none"> • 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. Assembly

6.1 Warning notices

DANGER	Use of incorrect spare parts, accessories or materials!
	<p>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.</p> <ul style="list-style-type: none"> • 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 pressurised fluids
	<p>There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.</p> <ul style="list-style-type: none"> • Before starting work, depressurise the pressurised system and secure it against unintentional pressurisation. • 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.

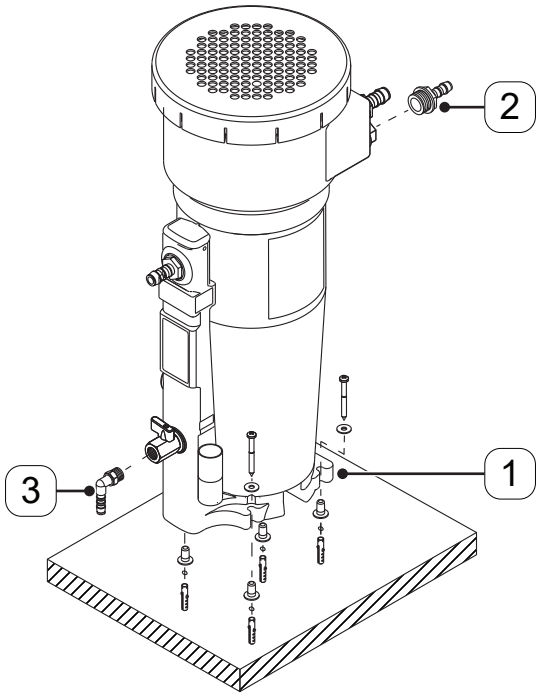
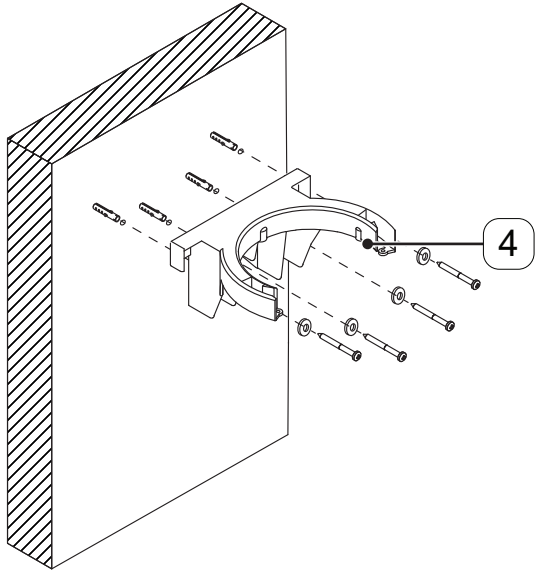
Prerequisites

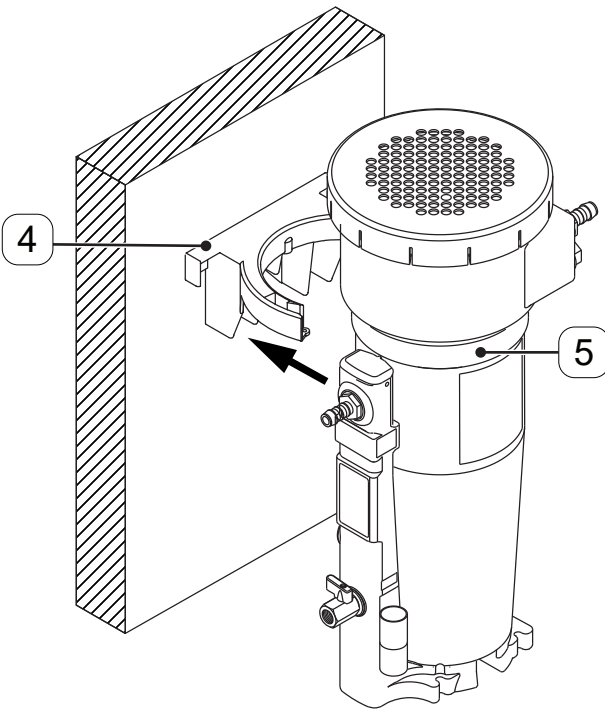
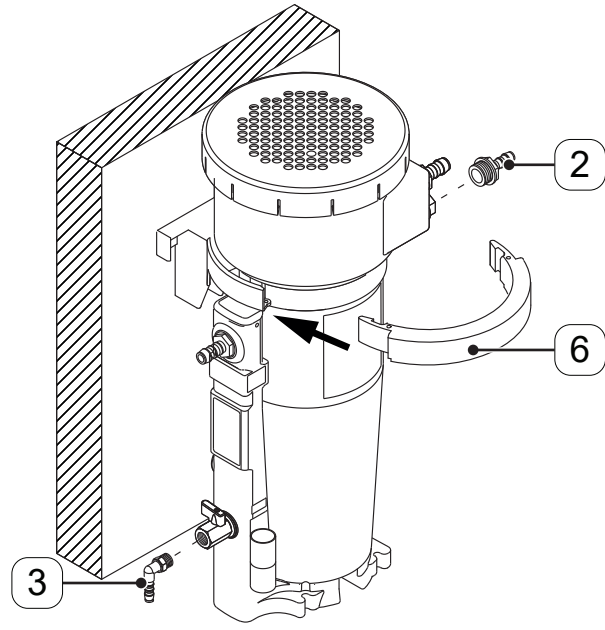
Tools	Material	Protective equipment
<ul style="list-style-type: none"> Adjustable wrench Water pump pliers Spirit level Power drill 	<ul style="list-style-type: none"> Sealing material (e.g. PTFE tape) for sealing the condensate connections provided by the customer Hose clamps Hose for condensate Fixing materials supplied 	Always to be worn: 

Preparatory tasks

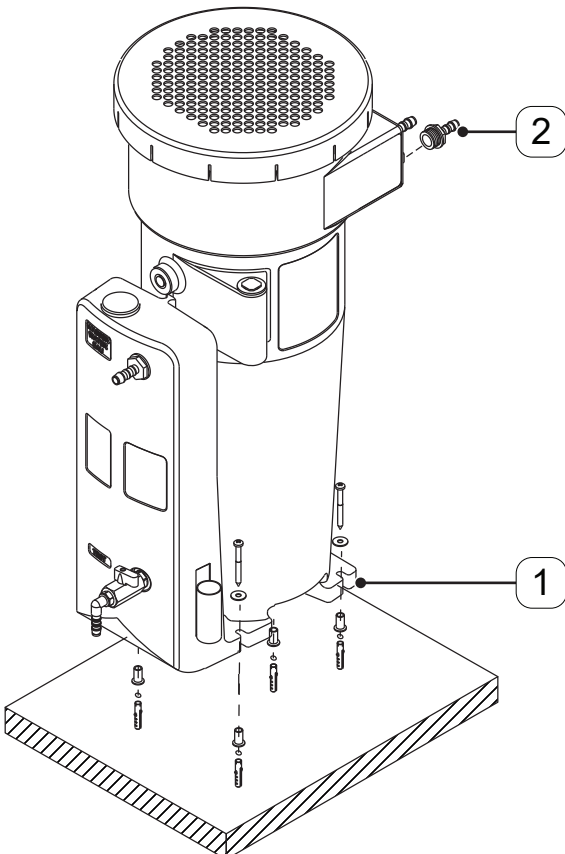
1.	Select and set up the place of installation according to the specifications in section “4.6 Installation conditions” on page 26.
2.	The condensate inlet line provided by the customer must be depressurised and locked and tagged out to prevent unintentional pressurisation.
3.	Have the necessary tools 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.

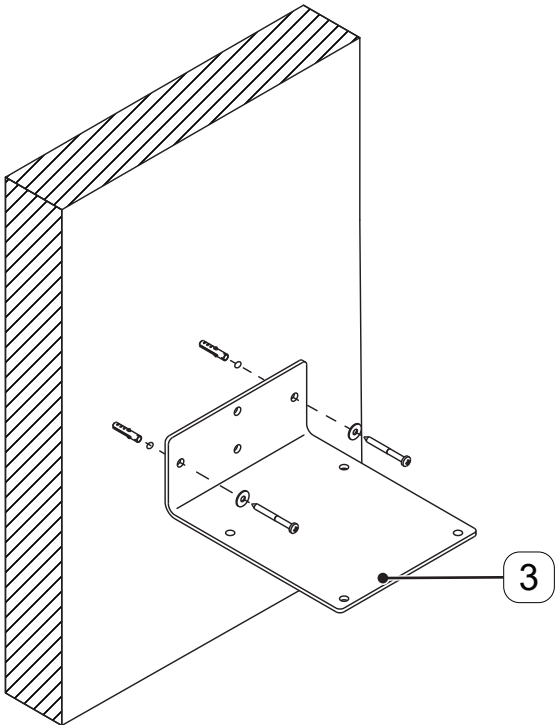
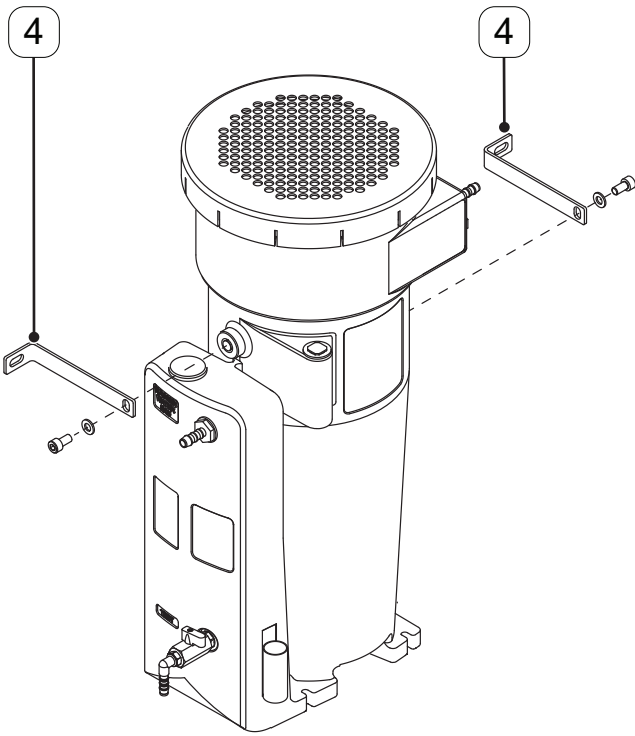
6.2.1 ÖWAMAT® 10

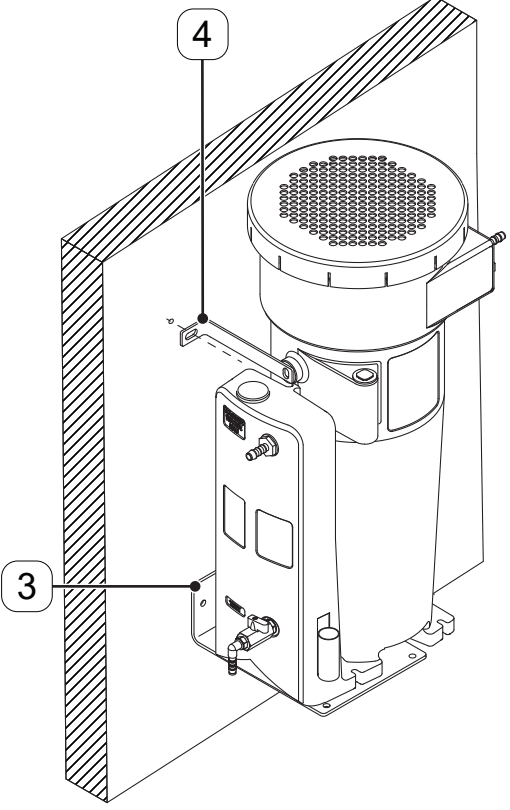
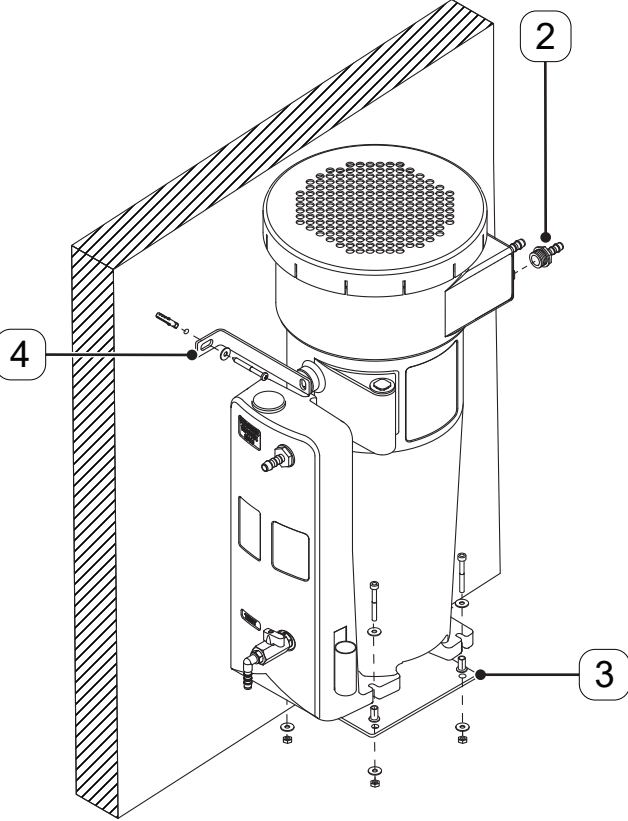
Installation Work	
Illustration	Description / explanation
	<p>Floor mounting</p> <ol style="list-style-type: none"> 1. Set up the ÖWAMAT® offset from the tapping point. 2. Mark the position of the 4 mounting-feet slot holes [1] on the mounting surface. 3. Put the ÖWAMAT® aside and drill holes at the marked locations. 4. Position the ÖWAMAT® over the drilled holes and level it. → Maximum tolerance $\pm 1^\circ$ 5. Fasten the ÖWAMAT® to the mounting surface using the fixing screws supplied. → Tighten the screws hand-tight. 6. Screw the hose connection [2] onto the ÖWAMAT®. 7. Screw the elbow connector [3] onto the ÖWAMAT®.
	<p>Wall mounting</p> <ol style="list-style-type: none"> 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 ($\pm 1^\circ$) and tighten the screws.

Installation Work	
Illustration	Description / explanation
	<p>5. Line the mounting surface [5] of the ÖWAMAT® up with the wall bracket [4] and push the ÖWAMAT® so that it slides into place.</p>
	<p>6. Snap the retaining clip [6] into place.</p> <p>7. Screw the hose connection [2] onto the ÖWAMAT®.</p> <p>8. Screw the elbow connector [3] onto the ÖWAMAT®.</p>


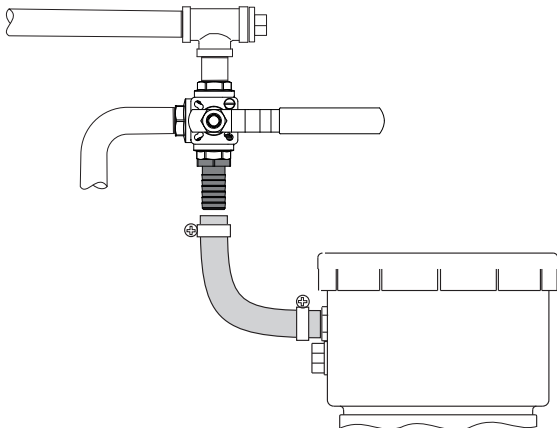
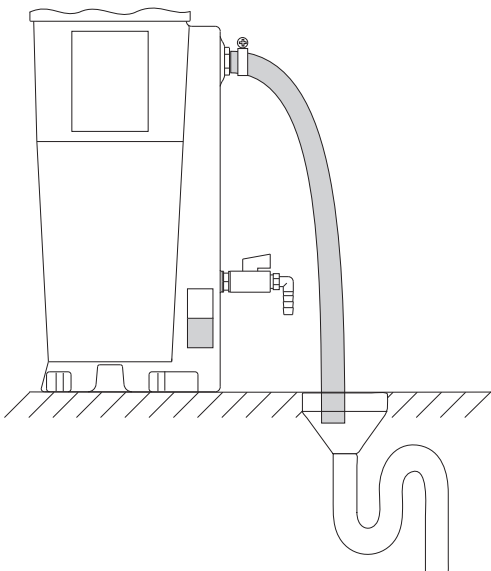
6.2.2 ÖWAMAT® 11

Installation Work	
Illustration	Description / explanation
	<p>Floor mounting</p> <ol style="list-style-type: none"> 1. Set up the ÖWAMAT® offset from the tapping point. 2. Mark the position of the 4 mounting-feet slot holes [1] on the mounting surface. 3. Put the ÖWAMAT® aside and drill holes at the marked locations. 4. Position the ÖWAMAT® over the drilled holes and level it. → Maximum tolerance $\pm 1^\circ$ 5. Fasten the ÖWAMAT® to the mounting surface using the fixing screws supplied. → Tighten the screws hand-tight. 6. Screw the hose connection [2] onto the ÖWAMAT®.

Installation Work	
Illustration	Description / explanation
	<p>Wall mounting</p> <ol style="list-style-type: none"> 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] ($\pm 1^\circ$) and tighten the screws.
	<ol style="list-style-type: none"> 4. Screw the side support brackets [4] onto the ÖWAMAT®.

Installation Work	
Illustration	Description / explanation
	<ol style="list-style-type: none"> 5. Position the ÖWAMAT® on the wall bracket [3]. 6. Transfer the position of the holes in the side support brackets [4] to the wall and put the ÖWAMAT® aside. 7. Drill holes at the marked locations.
	<ol style="list-style-type: none"> 8. Position the ÖWAMAT® on the wall bracket [3]. 9. Fasten the ÖWAMAT® 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. 11. Screw the hose connection [2] onto the ÖWAMAT®.


6.2.3 Connecting the ÖWAMAT®

Connection work	
Illustration	Description / explanation
<p>NOTE</p>  <p>Damage due to incorrect hose routing.</p> <p>Incorrect hose routing can result in property and environmental damage, as well as impaired operation.</p> <ul style="list-style-type: none"> • 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 ÖWAMAT® and the minimum bending radii of the respective hose are observed. • Do not lay the hoses in a slack manner (sagging). 	
	<p>12. 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.</p> <ul style="list-style-type: none"> → Do not lay the hose in a slack manner (sagging). → Tighten the hose clamps hand-tight.
	<p>13. Attach a water outlet hose to the condensate outlet and secure it against slipping with a hose clamp.</p> <ul style="list-style-type: none"> → Tighten the hose clamp hand-tight. <p>14. Route the water outlet hose with a steady slope and without any kinks to the connection to the wastewater system.</p> <p>15. Position the water outlet hose so that it hangs loosely in the trap funnel at the wastewater connection.</p>

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

7. Commissioning




7.1 Warning notices

DANGER	Sudden escape of pressurised 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.
	<ul style="list-style-type: none"> • Before pressurisation, check all system connections for leak tightness and tighten if necessary. • Slowly pressurise the system.

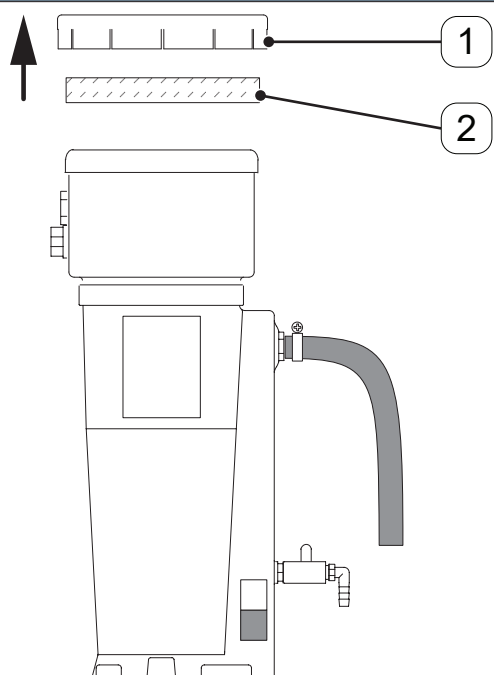
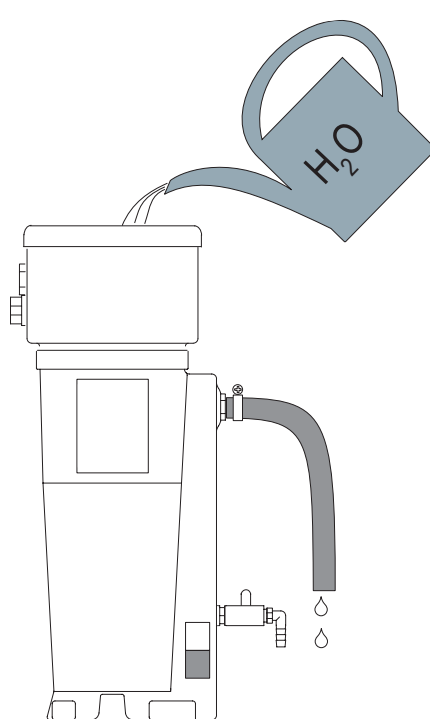
7.2 Commissioning work

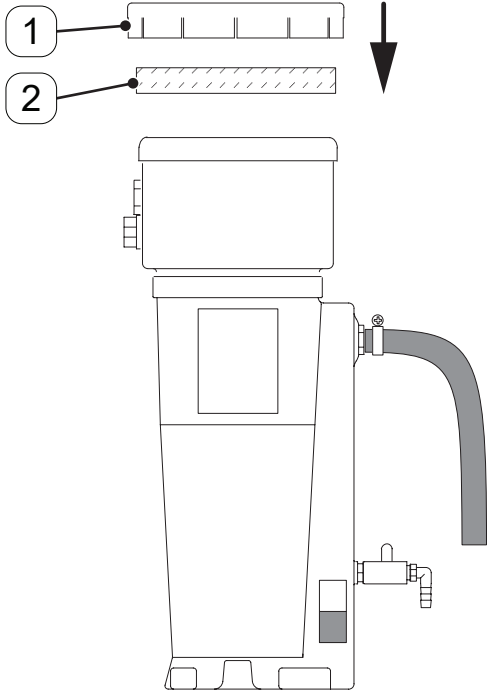
Personnel
Skilled technical personnel - pressure equipment and systems (see section “2.3 Target group and personnel” on page 8)

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
<ul style="list-style-type: none"> • No tool necessary 	<ul style="list-style-type: none"> • No material necessary 	Always to be worn: <div>    </div>

Preparatory tasks	
1.	Installation of the ÖWAMAT® is complete.

Commissioning work	
Illustration	Description / explanation
 The illustration shows the ÖWAMAT unit with its top cover removed, indicated by an upward arrow and a circled '1'. A filter mat, indicated by a circled '2', is shown being removed from the pressure relief chamber. The unit has a large water reservoir at the bottom and a condensate outlet at the top right.	<p>Fill the ÖWAMAT® with fresh water</p> <ol style="list-style-type: none">1. Remove the cover [1].2. Take the filter mat [2] out of the pressure relief chamber.
 The illustration shows the ÖWAMAT unit being filled with water from a blue watering can labeled 'H2O'. Water is shown pouring into the top reservoir. The condensate outlet at the top right is shown with a single drop of water, indicating that the pressure relief chamber is being filled.	<ol style="list-style-type: none">3. Fill the pressure relief chamber with tap water. → Stop filling it as soon as water comes out from the condensate outlet.

Commissioning work	
Illustration	Description / explanation
	<ol style="list-style-type: none">Put the filter mat [2] back in the pressure relief chamber [7].Put the cover [1] back on.Slowly open the condensate feed.Check all connections for leaks.

8. Operation

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

Preparatory tasks	
1.	The ÖWAMAT® has been set up and connected to the condensate collection line and the drain.
2.	Commissioning of the ÖWAMAT® is complete.


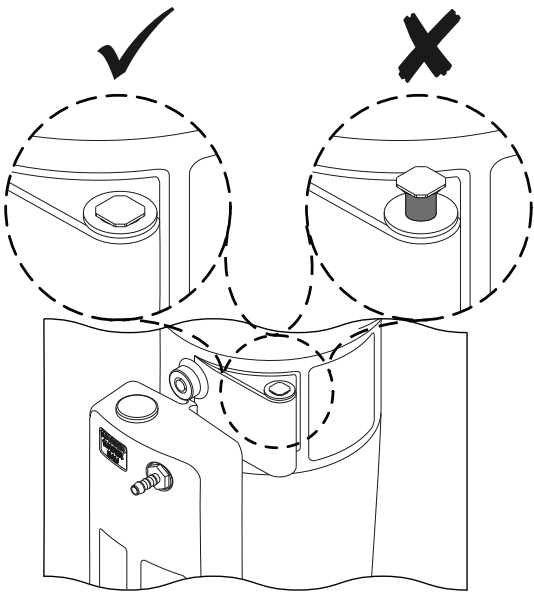



Prerequisites		
Tools	Material	Protective equipment
<ul style="list-style-type: none">No tool necessary	<ul style="list-style-type: none">No material necessary	Always to be worn: 

Illustration	Description
	<p>ÖWAMAT® 11 Check the level indicator.</p> <p>The level indicator’s red marking is not visible: → The ÖWAMAT® is working properly.</p> <p>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.</p>

9. Maintenance

9.1 Warning notices

DANGER	Sudden escape of pressurised fluids
	<p>There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.</p> <ul style="list-style-type: none"> Before starting work, depressurise the pressurised system and secure it against unintentional pressurisation.
CAUTION	Inappropriate cleaning and use of the wrong cleaning media!
	<p>Inappropriate cleaning and the use of the wrong cleaning media may result in minor injuries as well as damage to health and damage to property.</p> <ul style="list-style-type: none"> 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.
NOTE	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	<ul style="list-style-type: none"> Weekly
Filter replacement	<ul style="list-style-type: none"> 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 ÖWAMAT®	<ul style="list-style-type: none"> Annually At every filter replacement
Visual inspection	<ul style="list-style-type: none"> Weekly
Leakage test	<ul style="list-style-type: none"> Recommendation: After all assembly and maintenance work on the product

9.3 Maintenance work

Personnel
Skilled technical personnel - customer service (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


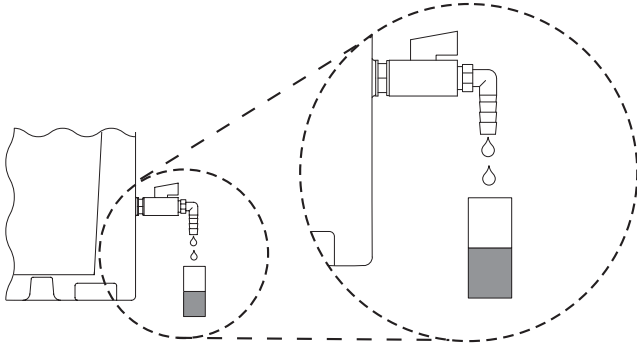
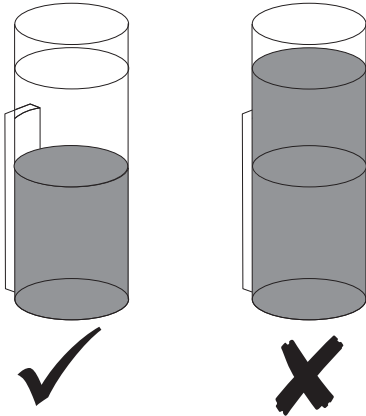

Prerequisites		
Tools	Material	Protective equipment
<ul style="list-style-type: none">No tool necessary	<ul style="list-style-type: none">No material necessary	Always to be worn: 

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

9.3.2 Filter replacement and cleaning

Prerequisites		
Tools	Material	Protective equipment
<ul style="list-style-type: none">No tool necessary	<ul style="list-style-type: none">OEKOSORB® filter element kit	Always to be worn: 

Preparatory tasks	
1.	Have the new OEKOSORB® filter element kit [6] available.

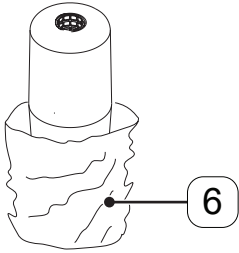
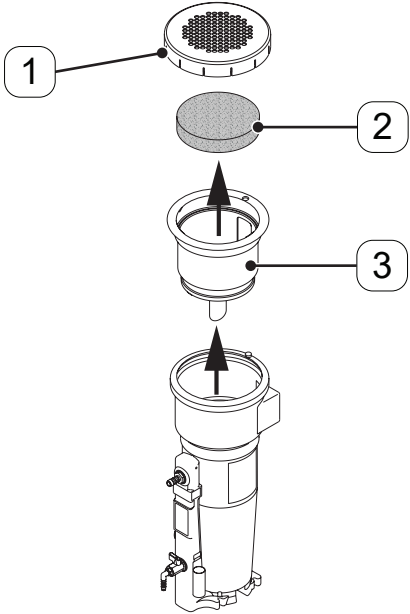
Illustration	Description
	<ol style="list-style-type: none">If the product has a built-in heating system, disconnect the heating system from the power supply.Cut off the condensate feed to the ÖWAMAT® and divert the condensate into a separate container.Get the OEKOSORB® filter element kit [6] ready. → Keep the PE bag that the kit came with so that it can be used for disposal of the used OEKOSORB® filter element.
	<ol style="list-style-type: none">Take off the cover [1].Remove the filter mat [2].Remove the pressure relief chamber and feed pipe [3].

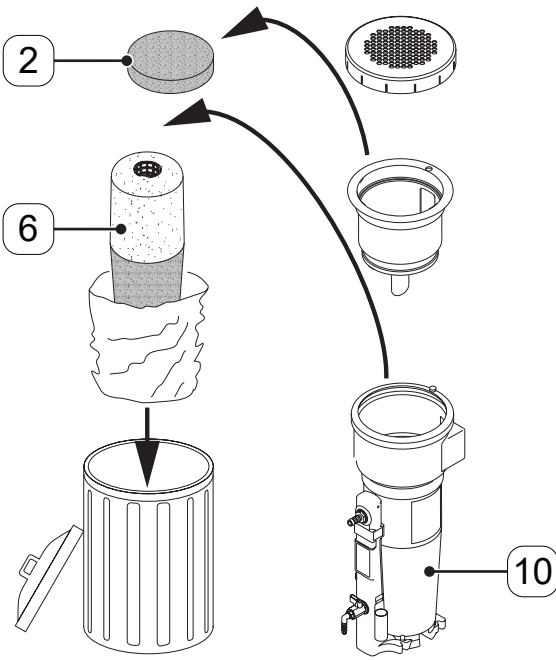
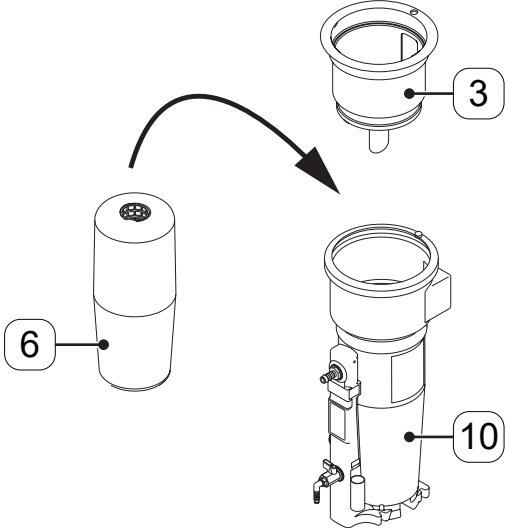
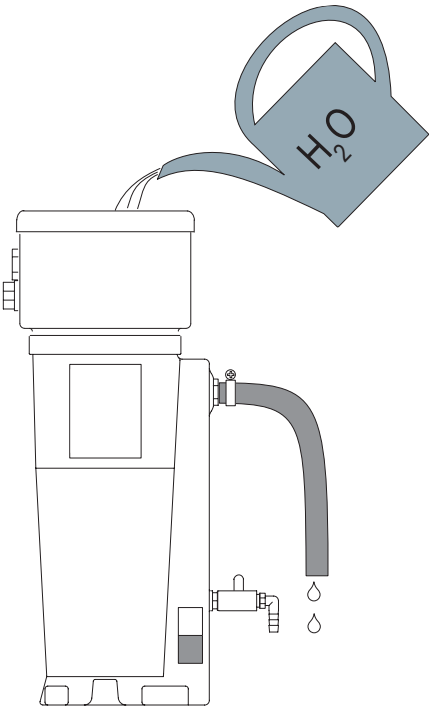
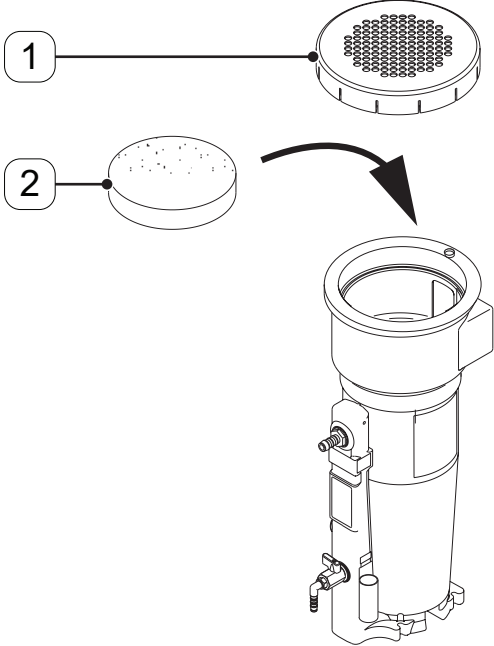
Illustration	Description
	<ol style="list-style-type: none"> 7. Slowly pull the used OEKOSORB® filter element [6] out of the container [10] and allow it to drain. 8. Place the drained OEKOSORB® filter element [6] and the used filter mat [2] in the PE bag and dispose of them properly (see section “13. Disposal” on page 58). 9. Pump the container [10] empty. <ul style="list-style-type: none"> → Collect and dispose of the liquid waste in accordance with locally applicable legal requirements and regulations. 10. Clean the container [10].
	<ol style="list-style-type: none"> 11. Insert the new OEKOSORB® filter element [6] into the filter seat of the container [10]. 12. Insert the pressure relief chamber and feed pipe [3].

Illustration	Description
 A line drawing of a vertical pressure relief chamber. A watering can with 'H ₂ O' on it is pouring water into the top. A hose is connected to the side, and a small outlet at the bottom is shown with a single drop of water falling from it.	<p>13. Fill the pressure relief chamber with tap water.</p> <p>→ Stop filling it as soon as water comes out from the condensate outlet.</p>
 A line drawing showing the assembly of a filter. Part 1 is a circular cover with a grid of small holes. Part 2 is a circular filter mat with a porous texture. An arrow points from the filter mat towards a larger vertical component that has a circular opening at the top, indicating where the mat should be inserted.	<p>14. Insert the new filter mat [2] into the pressure relief chamber.</p> <p>15. Put the cover [1] back on.</p> <p>16. Slowly open the condensate feed.</p> <p>17. Check all connections for leaks.</p> <p>18. If the product has a built-in heating system, reconnect the heating system to the power supply.</p>

9.3.3 Visual inspection

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

9.3.4 Leakage test

A leakage test is only possible if the **ÖWAMAT®** 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	<ul style="list-style-type: none"> • Tighten the hose clamp. • Replace hardened hose and respective hose clamps.

9.3.5 Concluding work

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

10. Consumables, accessories and spare parts

10.1 Order information

BEKO TECHNOLOGIES customer service requires the following data 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 information for the relevant **BEKO TECHNOLOGIES** Service team is listed in section “1.1 Contact” on page 4.

10.2 Wear parts

Designation	Material number	
	ÖWAMAT® 10	ÖWAMAT® 11
OEKOSORB® filter element kit		
• Filter element	4010719	4011999
• Filter mat		
Set of seals	4013857	4013858

10.3 Accessories

Designation	Material number	
	ÖWAMAT® 10	ÖWAMAT® 11
Wall bracket	4004277	4012186
Heating system	-	4001748
Level indicator	-	4011575
Alarm sensor for level indicator		4012448

10.4 Spare parts


Designation	Material number	
	ÖWAMAT® 10	ÖWAMAT® 11
Container	4012557	4012559
Pressure relief chamber with feed pipe	4012561	4012562
Filter mat and cover	4004290	2800909
Cover	On request	2000228
Reference turbidity tube 20 mg/l	2000556	
Reference turbidity tube 10 mg/l	4001475	
Reference turbidity tube 5 mg/l	4010073	
Service valve	2800891	

11. Taking the product out of operation

The ÖWAMAT® 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 pressurised fluids
	<p>There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.</p> <ul style="list-style-type: none"> • Before starting work, depressurise the pressurised system and secure it against unintentional pressurisation.

11.2 Decommissioning work

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


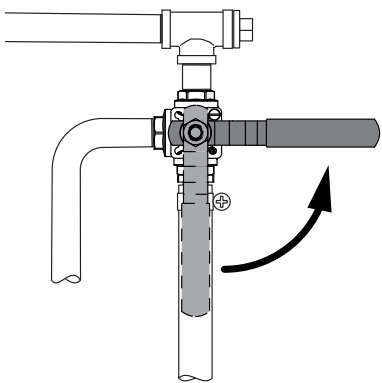

Prerequisites		
Tools	Material	Protective equipment
<ul style="list-style-type: none"> • No tool necessary 	<ul style="list-style-type: none"> • No material necessary 	<p>Always to be worn:</p> 

Illustration	Description / explanation
	<ol style="list-style-type: none"> 1. Cut off the condensate feed to the ÖWAMAT® and divert the incoming condensate into a separate container.

12. Dismounting




12.1 Warning notices

DANGER	Sudden escape of pressurised 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.
	<ul style="list-style-type: none"> Before starting work, depressurise the pressurised system and secure it against unintentional pressurisation.

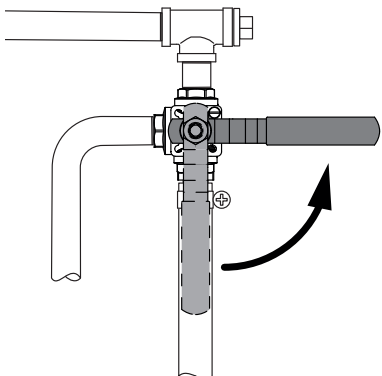
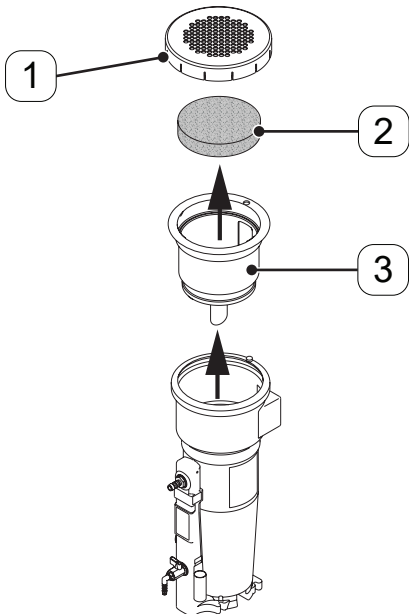
12.2 Dismounting work

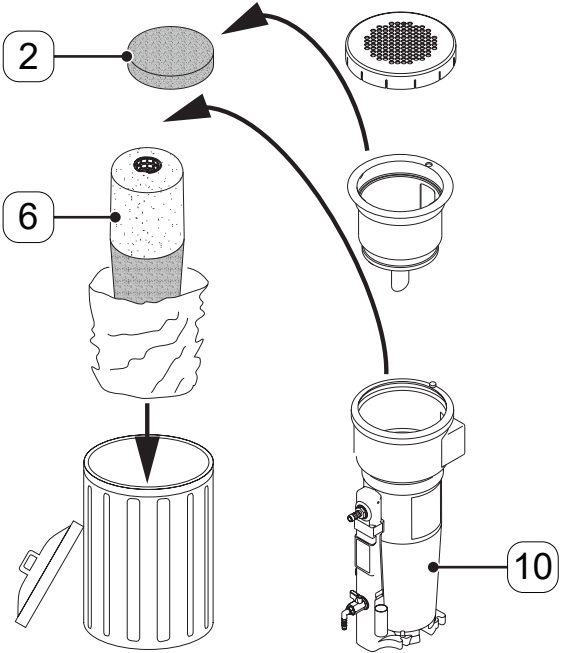
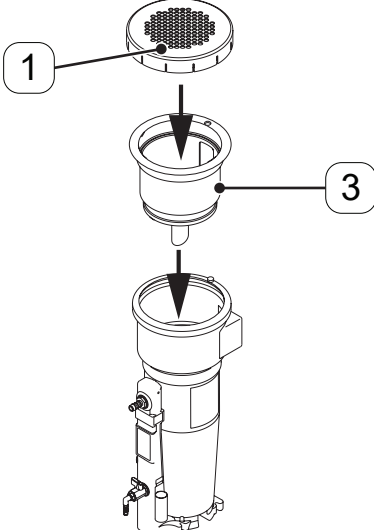
Personnel
Skilled technical personnel - customer service (see section “2.3 Target group and personnel” on page 8)

Preparatory tasks
1. The ÖWAMAT® has been taken out of operation.

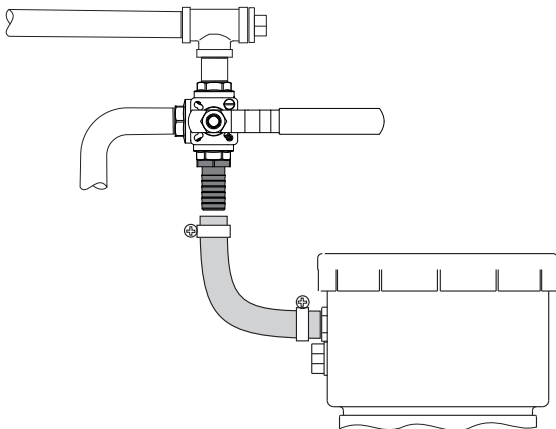
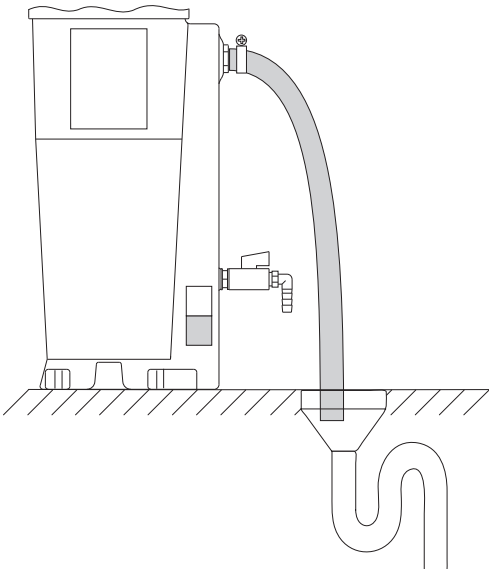
Prerequisites		
Tools	Material	Protective equipment
<ul style="list-style-type: none"> Adjustable wrench Water pump pliers 	<ul style="list-style-type: none"> Packaging for disposal of the used OEKOSORB® filter element. 	Always to be worn:   

12.2.1 Removing the OEKOSORB® filter element

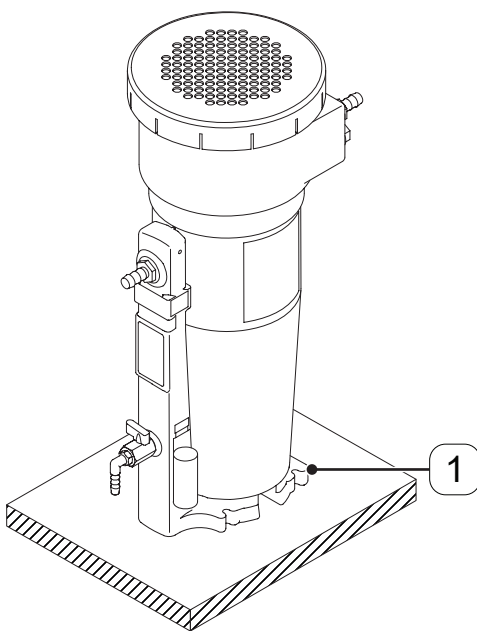
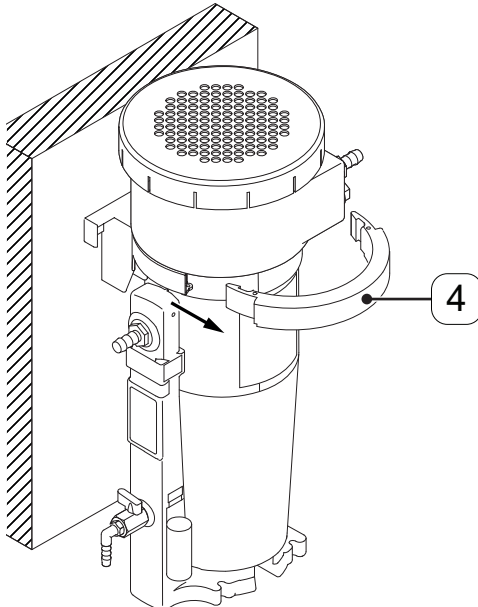
Disassembly work	
Illustration	Description / explanation
	<ol style="list-style-type: none">1. Cut off the condensate feed to the ÖWAMAT® and divert the incoming condensate into a separate container.
	<ol style="list-style-type: none">2. Take off the cover [1].3. Remove the filter mat [2].4. Remove the pressure relief chamber and feed pipe [3].

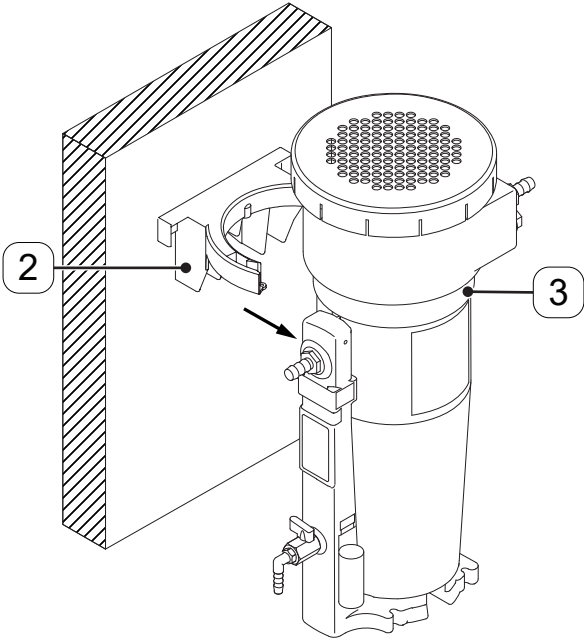
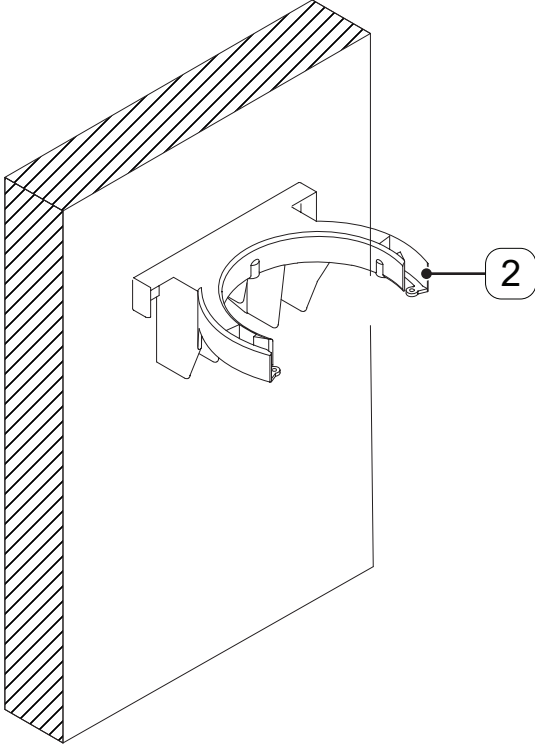
Disassembly work	
Illustration	Description / explanation
	<ol style="list-style-type: none"> 5. Slowly pull the used OEKOSORB® filter element [6] out of the container [10] and allow it to drain. 6. Place the drained OEKOSORB® filter element [6] and the used filter mat [2] in the PE bag and dispose of them properly (see section “13. Disposal” on page 58). 7. Pump the container [10] empty. <ul style="list-style-type: none"> → Collect and dispose of the liquid waste in accordance with locally applicable legal requirements and regulations. 8. Clean the container [10].
	<ol style="list-style-type: none"> 9. Insert the pressure relief chamber and feed pipe [3]. 10. Put the cover [1] back on.

12.2.2 Disconnecting the ÖWAMAT®

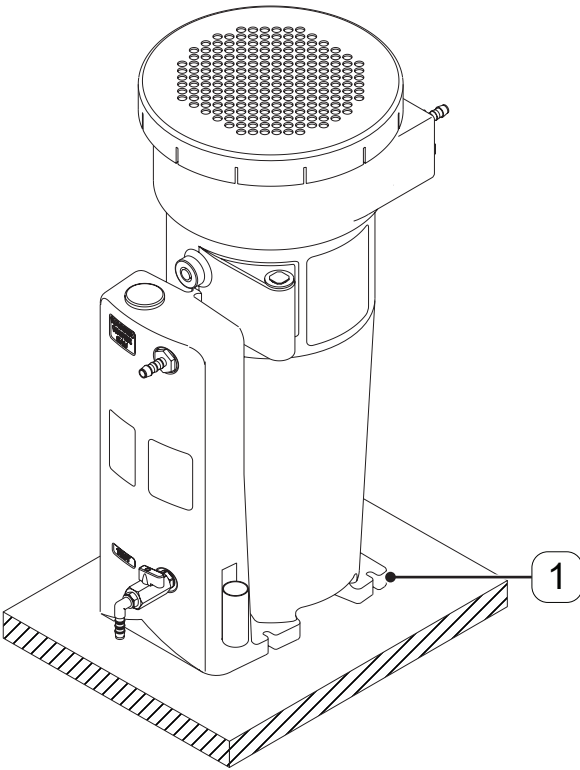
Installation Work	
Illustration	Description / explanation
	<ol style="list-style-type: none">11. Loosen the hose clamps at the tapping point and on the pressure relief chamber condensate inlet.12. Disconnect the hose from the pressure relief chamber and from the tapping point.
	<ol style="list-style-type: none">13. Loosen the hose clamp on the condensate outlet and disconnect the water outlet hose.

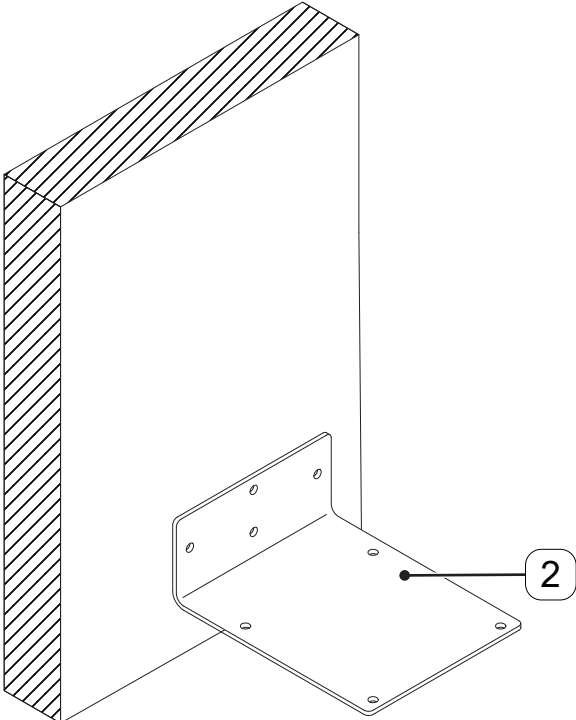
12.2.3 Uninstalling the ÖWAMAT® 10

Disassembly work	
Illustration	Description / explanation
	<p>Floor mounting</p> <ol style="list-style-type: none"> 1. Unscrew and remove the screws from the mounting feet [1]. 2. Dispose of the uninstalled ÖWAMAT® properly (see section “13. Disposal” on page 58).
	<p>Wall mounting</p> <ol style="list-style-type: none"> 1. Remove the retaining clip [4].

Disassembly work	
Illustration	Description / explanation
	<p>2. Pull the ÖWAMAT® out of the wall bracket [2].</p>
	<p>3. Unscrew and remove the screws from the wall bracket [2].</p> <p>4. Remove the wall bracket [2] from the wall.</p> <p>5. Dispose of the uninstalled ÖWAMAT® and the wall bracket [2] properly (see section “13. Disposal” on page 58).</p>

12.2.4 Uninstalling the ÖWAMAT® 11


Disassembly work	
Illustration	Description / explanation
	<p>Floor mounting</p> <ol style="list-style-type: none"> 1. Unscrew and remove the screws from the mounting feet [1]. 2. Dispose of the uninstalled ÖWAMAT® properly (see section “13. Disposal” on page 58).
	<p>Wall mounting</p> <ol style="list-style-type: none"> 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 ÖWAMAT®. 3. Unscrew and remove the screws from the mounting feet [1]. 4. Lift the ÖWAMAT® off the wall bracket [2].

Disassembly work	
Illustration	Description / explanation
	<ol style="list-style-type: none">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

NOTE	Inappropriate disposal!
	<p>Inappropriate disposal of parts, components, operating and auxiliary materials as well as cleaning media can cause environmental damage.</p> <ul style="list-style-type: none"> 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 BEKO TECHNOLOGIES. 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