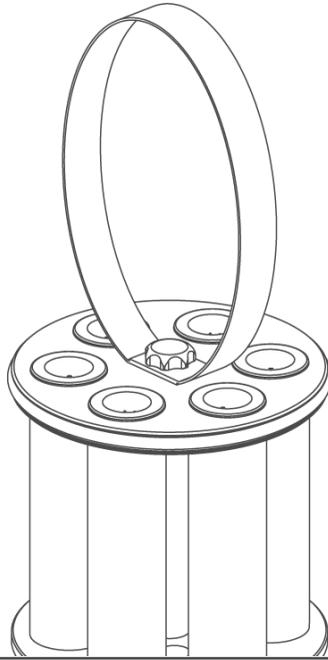


We understand water.



Accessories | desaliQ inline filter module

Operation manual

grünbeck

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Monday to Thursday
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Friday
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1 Introduction

This manual is intended for qualified specialists in the heating sector.

- ▶ Carefully read this manual and the included manuals on the components before you operate the product.
- ▶ Comply with all specified safety and handling instructions of this manual.
- ▶ Keep this manual and all other applicable documents, so that they are available when needed.

1.1 Validity of the manual

This manual applies to the products below:

- desaliQ inline filter module

1.2 Other applicable documents

- Operation manual of mixed bed cartridge desaliQ:MB9
- Operation manual of desaliQ inline control module
- Quick reference manual of desaliQ inline filter module

1.3 Target group

Grünbeck's technical service or qualified specialists trained by Grünbeck.

Expertise in the application of the product is assumed.

1.3.1 Personal protective equipment

- ▶ As an owner/operating company, make sure that the required personal protective equipment is available.

The components below fall under the heading of personal protective equipment (PPE):



Protective gloves for hot water



Protective footwear



Protective overall



Protective goggles

1.4 Symbols used

| Symbol | Meaning |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------|
|  | Danger and risk |
|  | Important information or requirement |
|  | Useful information or tip |
|  | Written documentation required |
|  | Reference to further documents |
|  | Work that must be carried out by qualified specialists only |

1.5 Depiction of warnings

This manual contains information and instructions that you must obey for your personal safety. The information and instructions are highlighted by a warning symbol and are structured as shown below:



SIGNAL WORD

Type and source of hazard

- Possible consequences
- ▶ Preventive measures

The following signal words are defined subject to the degree of danger and might be used in the present document:

| Warning symbol and signal word | | Consequences if the information/instructions are ignored |
|--------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------|
|  DANGER | Personal injuries | Death or serious injuries |
|  WARNING | | Possible death or serious injuries |
|  CAUTION | | Possible moderate or minor injuries |
| NOTE | Damage to property | Possible damage to components, the product and/or its function or damage to an object in its vicinity |

2 Safety

2.1 Safety measures

- Only use genuine spare parts for maintenance or repair.
- Risk of burns and scalding due to hot surfaces on lines and components as well as due to escaping heating water. Let the product cool down to at least 30 °C first before carrying out any repair and maintenance work.
- Risk of slipping due to escaping heating water.
- Risk of tripping due to hoses and electric cables on the floor.

2.1.1 Pressure-related hazards

- Components can be under pressure. There is a risk of injuries and damage to property due to escaping water and unexpected movement of components.
- Before starting repair and maintenance work, make sure that all affected components are depressurised.

2.1.2 Groups of persons requiring protection

- Children must not play with the product.
- This product is not designed to be used by persons (including children) with reduced capabilities, lack of experience or lack of knowledge.
- Persons with metallic implants or pacemakers must only use the product while wearing protective clothing against electromagnetic fields

2.2 Product-specific safety instructions



CAUTION

Danger due to strong magnetic field



- Cardiovascular problems
- Danger to health in case of metallic implants or pace-makers
- ▶ If you have active or passive implants or pacemakers, avoid working directly on the product.
- ▶ Do not disassemble the magnetic rod.

Labels on the product



Hot surface



Magnetic field

- ▶ Obey all warnings and safety instructions.

3 Product description

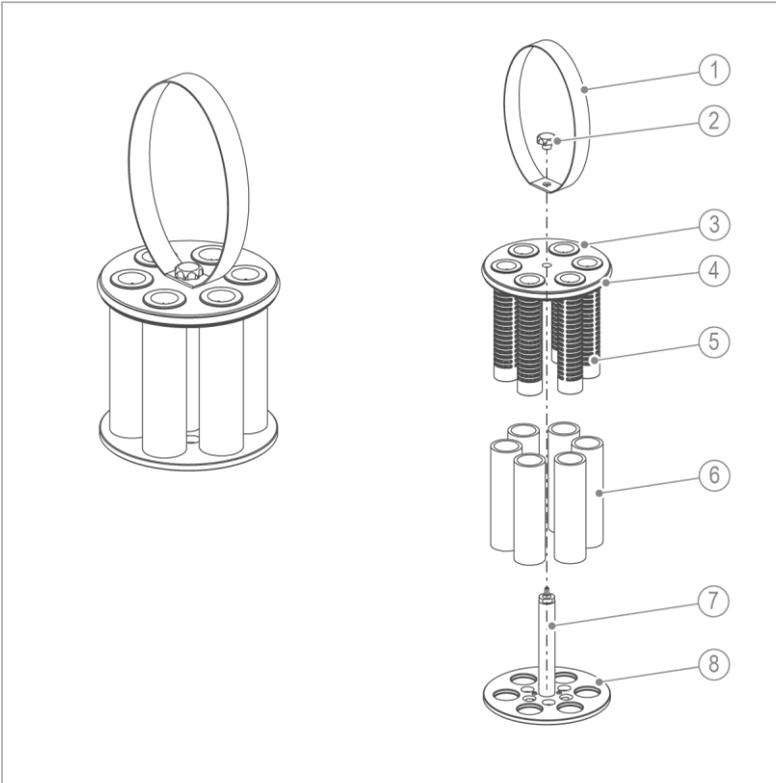
3.1 Intended use

- The desaliQ inline filter module is designed for filtering and treating heating water during ongoing operation.
- The desaliQ inline filter module is used in combination with a mixed bed cartridge desaliQ:MB9.
- The desaliQ inline filter module can also be used in combination with a desaliQ resin bag.

3.1.1 Foreseeable misuse

- The desaliQ inline filter module must not be used for filtering raw water that is to be used for drinking water.

3.2 Product components



| Item | Designation | Item | Designation |
|------|--------------|------|-----------------|
| 1 | Strap | 2 | Star knob |
| 3 | Upper part | 4 | O-ring |
| 5 | Support mesh | 6 | Filter elements |
| 7 | Magnetic rod | 8 | Lower part |

3.3 Functional description

The unfiltered heating water flows from the bottom through the inlet side of the cartridge and through the flow distributor.

Then, the water containing the particles passes the magnetic rod. Magnetic particles such as iron particles/magnetite, etc. are attracted and removed from the heating water.

The water pre-cleaned in this way flows through the 6 filter elements.

By using the strap, the desaliQ filter module can be easily removed from the mixed bed cartridge desaliQ:MB9.

4 Transport and storage

4.1 Transport

- ▶ Transport the product in its original packaging only.

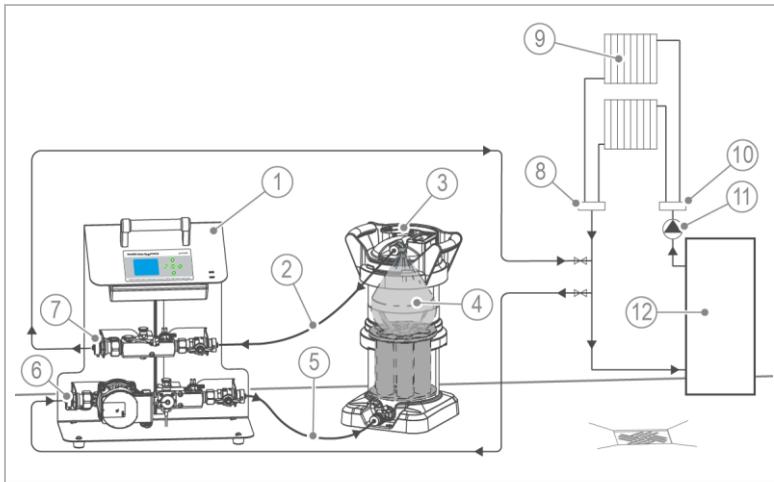
4.2 Storage

- ▶ Protect the product from the impacts below when storing it:
 - Dampness, moisture
 - Environmental impacts such as wind, rain, snow, etc.
 - Frost, direct sunlight, severe heat exposure
 - Chemicals, dyes, solvents and their vapours

5 Installation

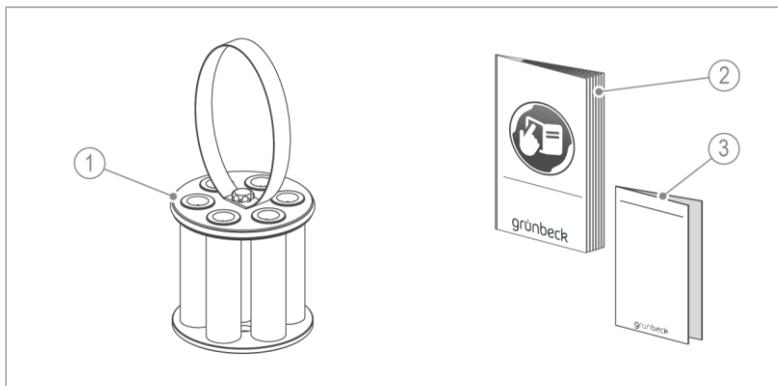


The work below must be carried out by qualified specialists only.



| Item | Designation | Item | Designation |
|------|--------------------------------------|------|--------------------------------------------------|
| 1 | desaliQ inline control module | 2 | Outlet from desaliQ:MB9 (filtered heating water) |
| 3 | Mixed bed cartridge desaliQ:MB9 | 4 | desaliQ resin bag |
| 5 | Inlet to desaliQ:MB9 (heating water) | 6 | Connection from heating circuit |
| 7 | Connection to heating circuit | 8 | Return of heating circuit |
| 9 | Consumer | 10 | Supply of heating circuit |
| 11 | Circulation pump | 12 | Boiler |

5.1 Checking the scope of supply



| Item | Designation | Item | Designation |
|------|------------------------------|------|------------------|
| 1 | desaliQ inline filter module | 2 | Operation manual |
| 3 | Quick reference manual | | |

- Check the scope of supply for completeness and damage.

5.2 Installing the product



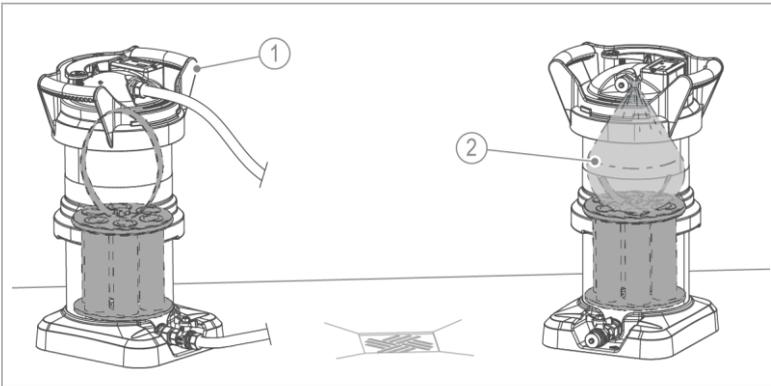
Obey the operation manual of mixed bed cartridge desaliQ:MB9.

NOTE

Carry-over of foreign substances or chemicals (e.g. particles, precipitates, ...)

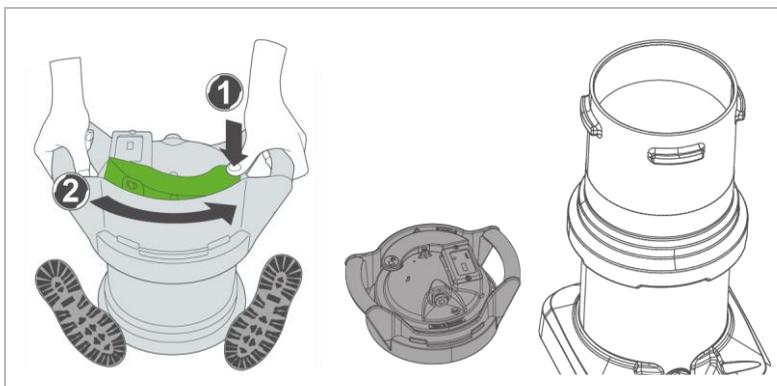
- Risk of damage to the heating system or consumers connected to it.
- ▶ Replace the filter elements before each use.
- ▶ Thoroughly clean the magnetic rod after each use.

Installation example



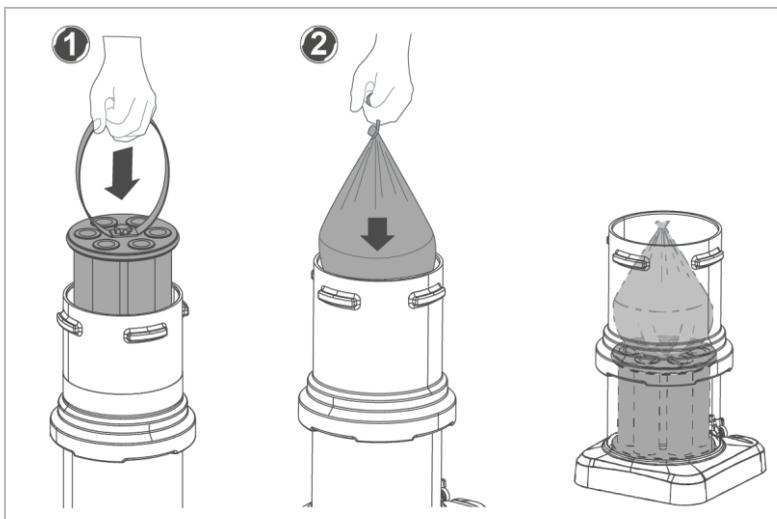
| Item | Designation | Item | Designation |
|------|---------------------------------|------|-------------------|
| 1 | Mixed bed cartridge desaliQ:MB9 | 2 | desaliQ resin bag |

Opening the mixed bed cartridge desaliQ:MB9



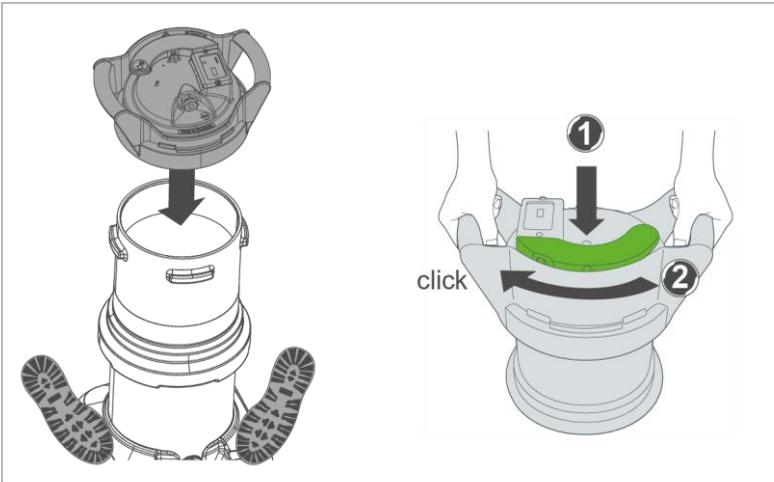
1. Unlock and open the mixed bed cartridge.

Inserting the desaliQ inline filter module and the desaliQ resin bag

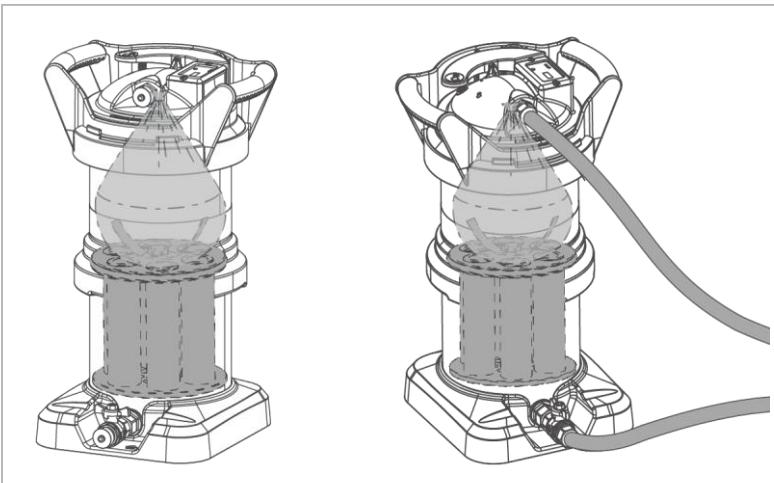


1. Insert the filter module.
2. Insert the (optional) resin bar.

Closing the mixed bed cartridge desaliQ:MB9



1. Close and lock the mixed bed cartridge.



- » The mixed bed cartridge is filled with the desaliQ inline filter module and the (optional) desaliQ resin bag

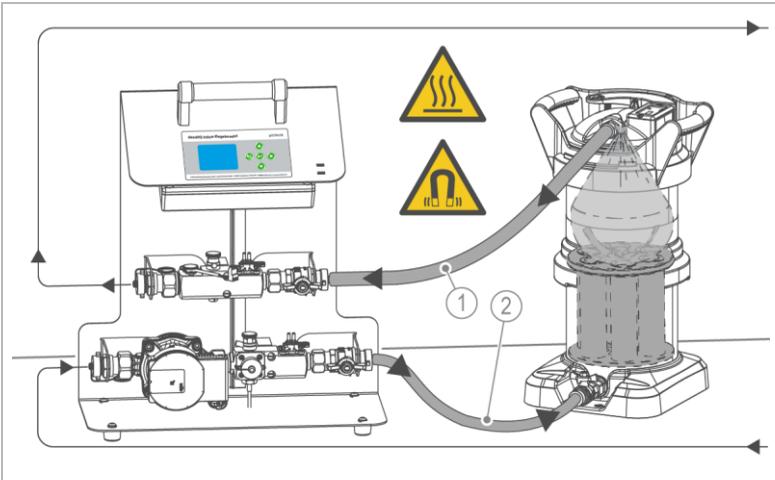
6 Start-up/Commissioning

6.1 Starting up the product



Obey the operation manual of the desaliQ inline control module.

- ▶ Connect the desaliQ inline control module to the heating circuit.



| Item | Designation | Item | Designation |
|------|-------------------------------------------------------------------------|------|-------------------------------------------------------------|
| 1 | Hose connection: Outlet from desaliQ:MB9 (filtered heating water) | 2 | Hose connection: Inlet to desaliQ:MB9 (heating water) |

1. Connect the hose connections to the mixed bed cartridge.
2. Vent the mixed bed cartridge.

7 Operation



WARNING

Hot heating water



- Risk of burns due to hot surfaces on lines and components at temperatures of more than 55 °C.
- Risk of scalding due to escaping hot heating water.
- ▶ Do not touch the components without appropriate, protective gloves.

The duration of the filter operation depends on the degree of impurities, the volume and the hydraulic conditions in the heating circuit.

The desaliQ inline control module controls the operation and indicates when interventions are required.

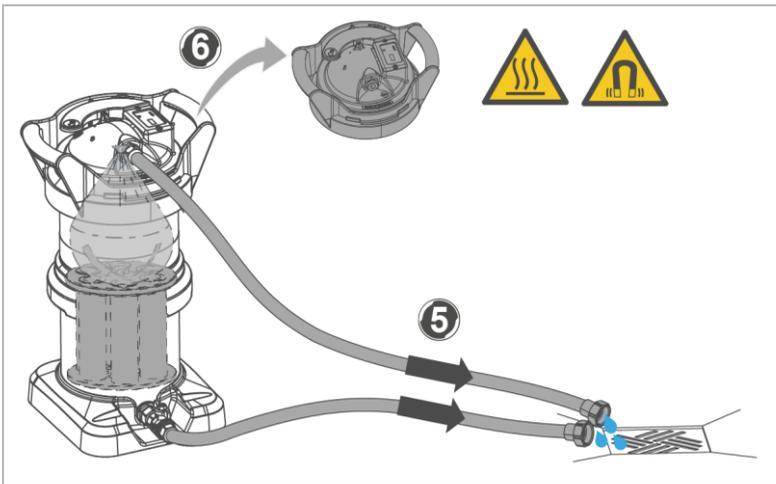
- ▶ Obey the instructions in the display of the desaliQ inline control module.
- ▶ Replace the filter elements and the desaliQ resin bag when exhausted.
- ▶ Clean the mixed bed cartridge desaliQ:MB9 when the flow rate is low (refer to chapter 8.1).

7.1 Replacing filter elements and resin bag

7.1.1 Preliminary work



First, the heating water in the desaliQ inline filter module must cool down to room temperature ($\leq 30\text{ }^{\circ}\text{C}$).



1. Close the shut-off valves to the mixed bed cartridge on the desaliQ inline control module.
2. Close the shut-off valves on the mixed bed cartridge.
3. Disconnect the hose connections from the desaliQ inline control module.
4. Route the hoses to a floor drain or to a collection container.
5. Let the mixed bed cartridge drain completely.
6. Open the lid of the mixed bed cartridge.

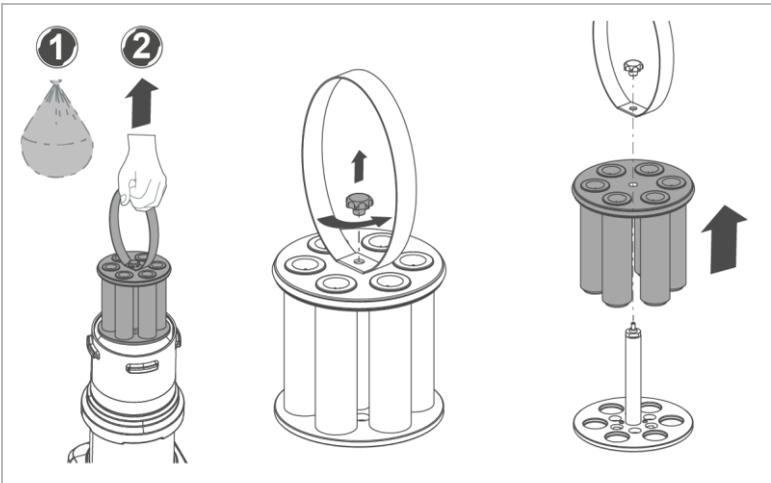
7.1.2 Replacing the filter elements



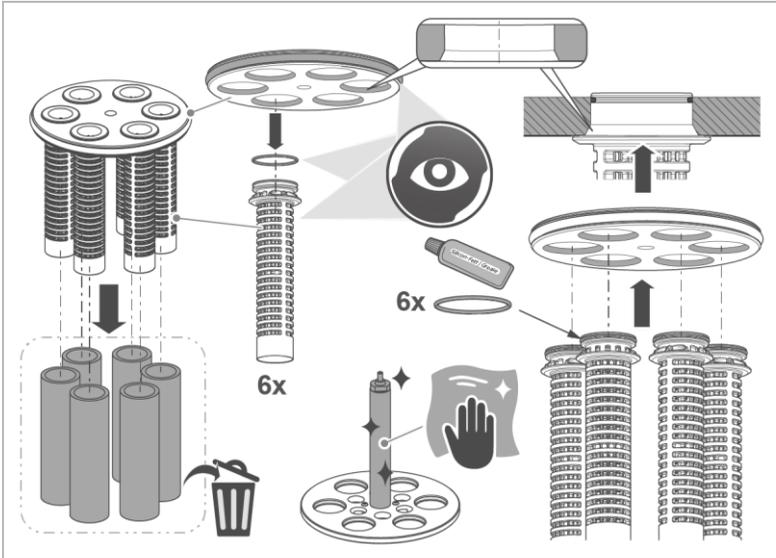
CAUTION

Escaping water

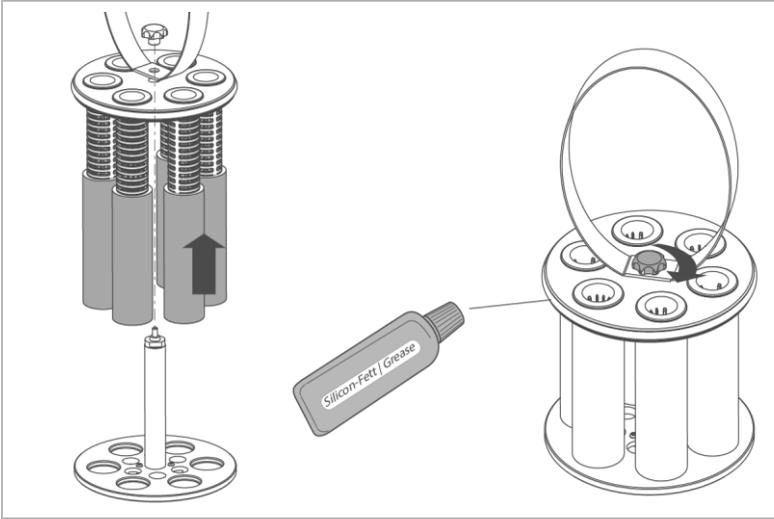
- When removing the resin bag and the filter module from the mixed bed cartridge, a residual amount of water will escape.
- Risk of slipping and falling.
 - ▶ Use safety shoes and protective gloves.
 - ▶ Have a cloth handy and wipe up escaping water immediately.



1. Remove the exhausted resin.
 - » The exhausted resin bag can be disposed of as household waste.
2. Remove the filter module.
3. Unscrew the star knob.
4. Remove the strap.
5. Pull the upper part off the lower part.



6. Pull the used filter elements off the support mesh.
 - » The used filter elements can be disposed of with the household waste.
7. Pull of the support mesh downwards.
8. Clean the magnetic rod with a dry cloth.
9. Check the O-ring, the support mesh as well as the O-rings on the support mesh for cleanliness and damage.
10. Clean the components, if needed or replace them if they are damaged.
11. Firmly insert the support mesh with greased O-rings from below into the lead-in chamfer of the upper part.



12. Slide the new filter elements over the support mesh.
13. Put the upper part onto the lower part.
14. Firmly tighten the strap using the star knob.
15. Lubricate the O-ring with silicone grease, if needed.
 - » The filter module is completed and ready for use again.

8 Maintenance and repair

Maintenance and repair includes cleaning, inspection and maintenance of the product.

Regular maintenance ensures trouble-free and hygienic operation.

- ▶ Only use genuine spare and wearing parts from Grünbeck.

8.1 Cleaning

NOTE:

Do not clean the system with cleaning agents containing alcohol/solvents.

- These substances damage the plastic components.
 - ▶ Use a mild/pH-neutral soap solution.
- ▶ Clean the product with drinking water.
- ▶ Do not use any strong or abrasive cleaning agents.

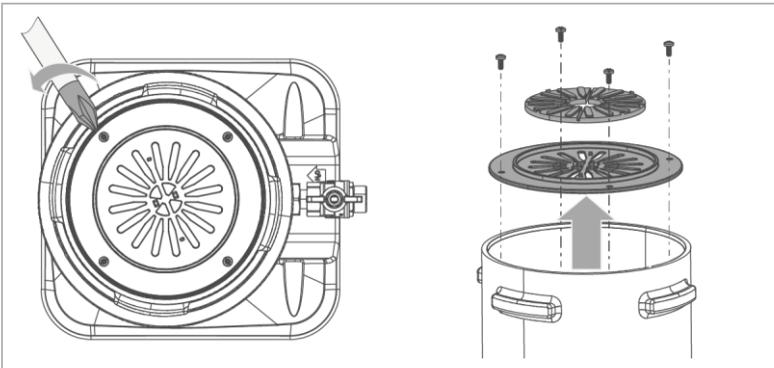
8.1.1 Cleaning the inside of mixed bed cartridge desaliQ:MB9



For cleaning, refer to the operation manual of the desaliQ:MB9.

The screen element acting as flow distributor at the bottom of the mixed bed cartridge can be clogged after use.

► Proceed as follows to clean the screen element:



1. Loosen the screw connections of the lower screen element at the bottom.
2. Remove the screen element.
3. Wash out the screen element with water and let it dry.
4. Insert the screen element again and fix it with the screw connections.

8.2 Intervals



By way of regular inspections and maintenance, malfunctions can be detected in time and product failures might be prevented.

The interval table below shows the minimum intervals for the activities to be carried out.

| Task | Interval | Execution |
|-------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cleaning and inspection | After each use | <ul style="list-style-type: none"> • Replace the filter elements • Clean the magnetic rod • Clean the support mesh • Clean the inside of the mixed bed cartridge • Visually check the O-rings and the strap |
| Maintenance | 6 months or as needed – in case of impurities | <ul style="list-style-type: none"> • Check components for damage • Lubricate the O-rings • Check the magnetic rod for tight fit |

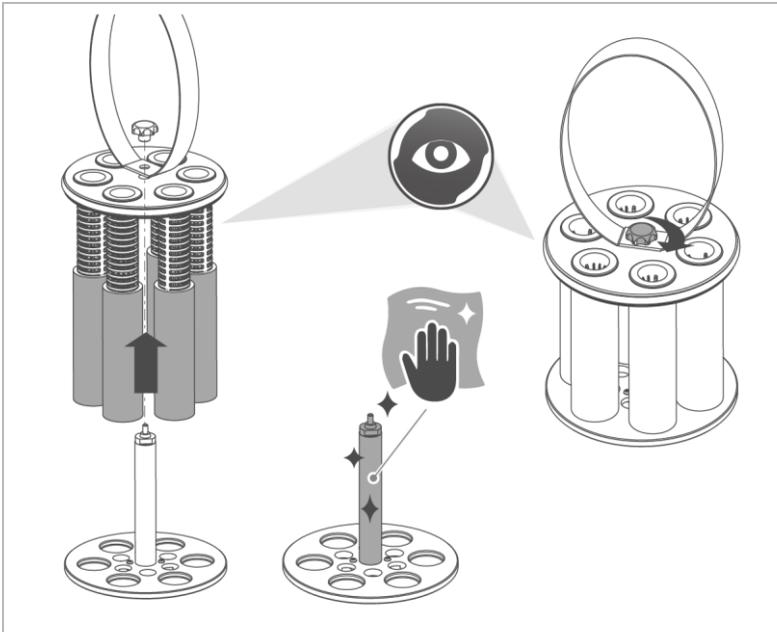
8.3 Inspection



The desaliQ inline filter module must be inspected after each use.

- ▶ Proceed as follows to carry out an inspection:
 1. Drain the mixed bed cartridge at the lower connection.
 - » Dirt particles are washed out and the mixed bed cartridge is depressurised.
 2. Remove the resin bag and the filter module.
 3. Remove and clean the screen element at the bottom of the mixed bed cartridge (refer to chapter 8.1.1).

Cleaning the desaliQ inline filter module



1. Loosen the star knob and remove the used filter elements.
2. Replace the filter elements (refer to chapter 7.1).
3. Check the O-rings and the strap for tears.
4. Clean the support mesh.
5. Clean the magnetic rod with a dry cloth.
6. Complete the filter module.



Note that the support mesh with the O-ring must be inserted into the lead-in chamfer of the upper part (refer to chapter 7.1.2).

8.4 Maintenance

In order to ensure the proper functioning of the product in the long term, certain tasks have to be performed at regular intervals.

DIN EN 806-5 recommends regular maintenance to ensure trouble-free and hygienic operation of the product.

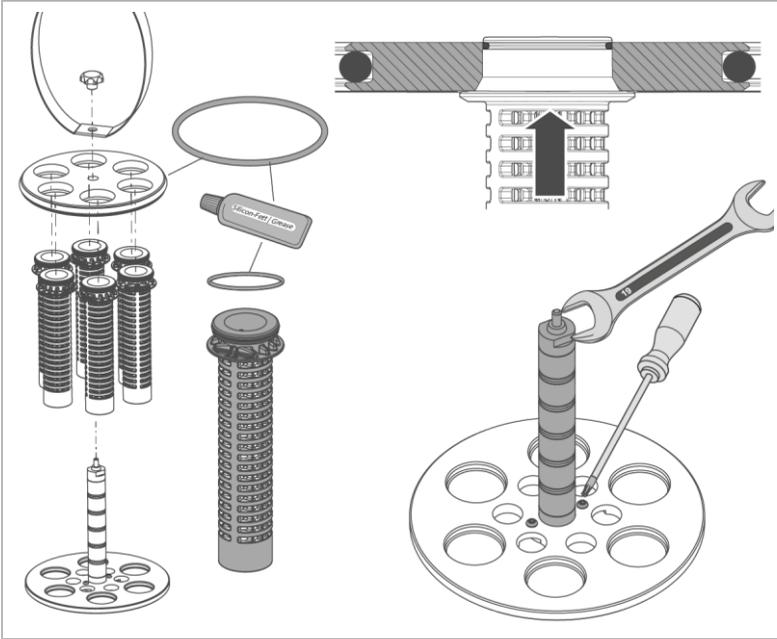


WARNING

Danger due to strong magnetic field



- Magnets can cause cardiovascular problems.
 - Danger to health in case of metallic implants or pace-makers.
 - ▶ Do not disassemble the magnetic rod.
 - ▶ Replace a defective magnetic rod in its entirety.
-
- ▶ In addition to the inspection, carry out the activities below every **6** months:



1. Remove the support mesh.
 2. Check the support mesh and the O-rings for damage.
 3. Lubricate the O-rings using silicone grease/silicone spray (care solution).
 4. Check the strap for damage.
 5. Check the magnetic rod for damage.
 6. Check the magnetic rod for tight fit.
 - a Tighten the locknut with SW19.
 - b Tighten the screws with TX20.
- Replace damaged components.

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8.5 Consumables

| Product | | Quantity | Order no. |
|---------------------------------------------------------------------------|----------|----------|---------------------|
| Replacement filter elements (5 µm) with spare O-rings for support mesh | piece(s) | 6 | 707000020000 |
| desaliQ resin bag (6 l) | piece(s) | 2 | 707 435 |

8.6 Spare parts

For an overview of the spare parts, refer to our spare parts catalogue at www.grünbeck.com. You can obtain the spare parts from your local Grünbeck representative.

8.7 Wearing parts

Wearing parts are listed below:

- O-ring
- Support mesh including O-ring (order no. 101 631e)

9 Troubleshooting

The fault messages are shown in the display of the desaliQ inline control module.

- ▶ Monitor the display of the control unit.
- ▶ Eliminate the fault.

| Observation | Explanation | Remedy |
|-----------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low flow in l/h | Screen element/flow distributor in mixed bed cartridge desaliQ:MB9 clogged | <ul style="list-style-type: none"> ▶ Drain the mixed bed cartridge at the lower connection ▶ Remove the screen element at the bottom and clean it |

10 Decommissioning

In case the mixed bed cartridge desaliQ:MB9 is taken out of operation between uses, the following points must be adhered to:

1. Drain the mixed bed cartridge at the lower connection.
 - » Dirt particles are washed out and the mixed bed cartridge is depressurised.
2. Remove the resin bag and the filter module.
3. Clean the filter module and replace the filter elements.
4. Put the filter module and the resin bag back into the mixed bed cartridge.
5. Transport the mixed bed cartridge in an upright position – do not tilt it.
6. Protect the mixed-bed cartridge from mechanical damage and environmental impacts when storing it.

10.1 Restart

- ▶ Put the mixed bed cartridge desaliQ:MB9 back into operation (refer to the operation manual of the mixed bed cartridge).
- ▶ Put the desaliQ inline filter module into operation (refer to chapter 6.1).

11 Dismantling and disposal

11.1 Dismantling

1. Put the mixed bed cartridge out of operation.
2. Remove the resin bag and the filter module from the mixed bed cartridge.

11.2 Disposal

- ▶ Obey the applicable national regulations.

Packaging

- ▶ Dispose of the packaging in an environmentally sound manner.

Filter elements and desaliQ resin bag

- ▶ Dispose of the filter elements and the resin bag with your household waste.

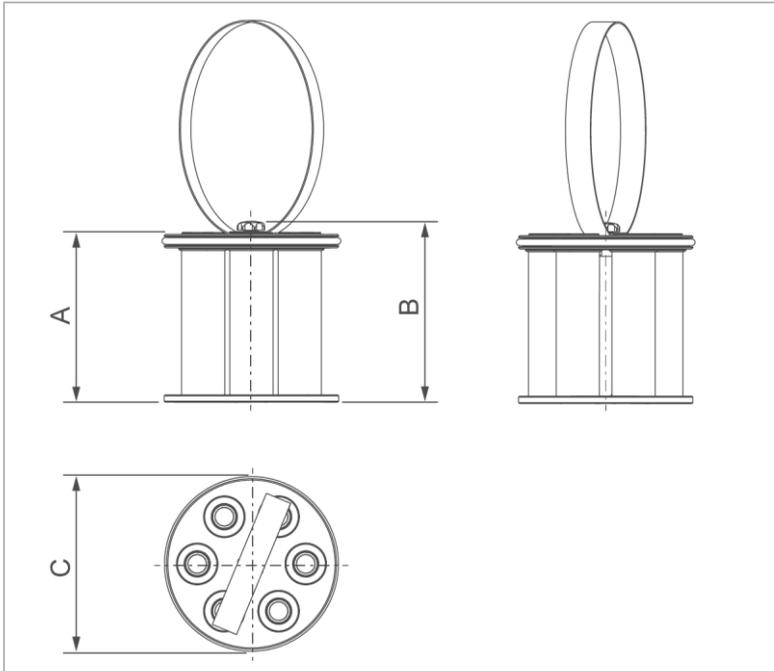
Product

- ▶ Make use of the collection points available to you for the disposal of your product.



For information on collection points for your product, contact your municipality, the public waste disposal authority or your waste collection service.

12 Technical specifications



Dimensions and weights

| | | | |
|---|------------------------------|----------|-----|
| A | Height of filter module | mm | 189 |
| B | Height with screw plug | mm | 201 |
| C | Diameter | mm | 198 |
| | Number of magnetic rods | piece(s) | 1 |
| | Number of filter elements | piece(s) | 6 |
| | Pore size of filter elements | µm | 5 |
| | Shipping weight, approx. | kg | 1.8 |

| Performance data | | |
|---------------------------------------------------------------|-------------------|---------------------|
| Operating pressure | bar | ≤ 4 |
| Flow at Δp 1 bar (in combination with desaliQ:MB9) | l/h | 720 |
| Nominal flow (in combination with desaliQ:MB9) | m ³ /h | 0.9 |
| General data | | |
| Water temperature | °C | 5 – 65 |
| Ambient temperature | °C | 5 – 65 |
| Order no. | | 707000010000 |

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