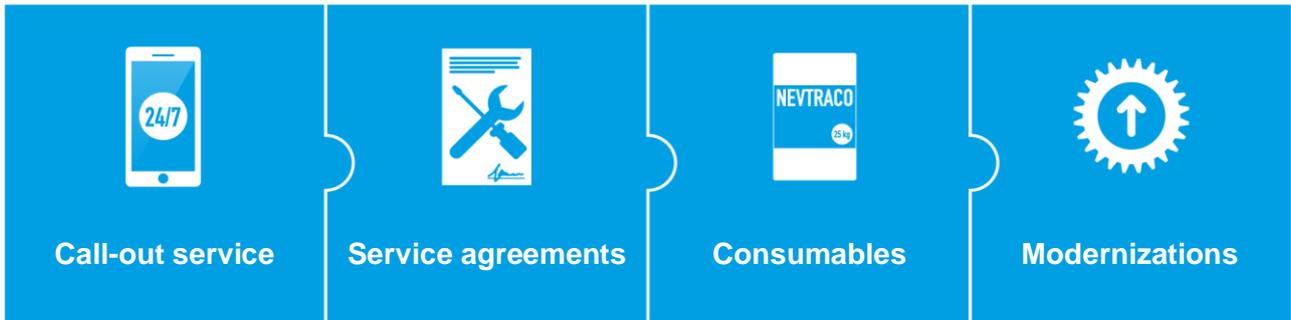


# Instructions for SILEX 2BS Mixed bed cartridge filter

With conductivity meter | Pressure installation





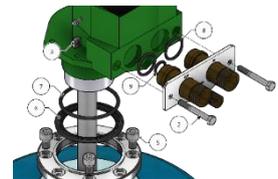
## International after sales service

EUROWATER has an international sales and service organization with an experienced staff of engineers and specially trained service technicians. Our service is fully documented, characterized by a short reaction time and our goal is to be easy to work with in all situations. We offer both standard and customized service agreements, high-quality consumables, and modernizations.

In order to keep your critical systems running, EUROWATER offers call-out service for urgent needs, individual service agreement on preventive maintenance, access to high-quality spare parts and consumables as well as modernizations in all shapes and sizes.

## Spare parts and consumables

We stock spare parts, service kits, and consumables, mainly of our own make. Our service cars are equipped with a broad range of spare parts. We continuously supply spare parts for more than 25-year-old plants. Read more about spare parts and consumables at the end of these instructions.



## Rental plants for temporary needs

In case of temporary needs, such as an emergency or planned maintenance, EUROWATER offers a range of mobile rental plants, ready for use upon delivery.



## Training

The more you know about your water treatment plant, the better equipped you are to deal with the routine operations of the plant, thereby minimizing down time. As part of our commitments to provide first class service, we offer specialized operator training for your staff.



## Contact

EUROWATER is an international group with subsidiaries in 14 countries servicing our customers through 23 local offices. Moreover, the company is represented in most of the other European countries through independent distributors who are all water treatment specialists.



Find your local sales and service office on our international website:

[www.eurowater.com](http://www.eurowater.com)

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## 1. Introduction

The instructions are made so that they can be followed section by section. We recommend following the instructions carefully since any service calls due to faulty installation, plant start, operation or insufficient maintenance are not covered by our guarantee.

## 2. General information

### 2.1. System description

A complete SILEX system comprises a tank, a cartridge, and a conductivity meter that continuously indicates the conductivity of the demineralized water.

The SILEX cartridge contains cation and anion exchangers with a certain demineralization capacity. At exhausted capacity, the used cartridge is exchanged for a regenerated cartridge. Return the used cartridge in the original packing to **the address of your regeneration centre**:

Here the cartridge will be regenerated and then returned, ready for use.

### 2.2. Quality requirements of the untreated water

The temperature of the water to be demineralized must not exceed 35°C and must not contain iron, manganese, oil, or large quantities of organic matter. Common waterworks water will normally meet these requirements.

### 2.3. Dissolved salts in the water – conductivity

The electronic conductivity meter continuously indicates the conductivity of the demineralized water in  $\mu\text{S}/\text{cm}$ . The conductivity is a measure of the dissolved solids in the water. Lower conductivity means fewer dissolved solids.

<b>Water type</b>	<b>Conductivity</b>
Distilled water	7-10 $\mu\text{S}/\text{cm}$
Demineralized SILEX water	< 0.1 $\mu\text{S}/\text{cm}$

### 2.4. Storage of a SILEX cartridge

In consideration of the ion exchangers, the SILEX cartridge must be stored in a frost-free room. Store unused cartridges as cool as possible – preferably at refrigerator temperature, i.e. 4-8°C. Storage at higher temperatures supports the risk of microbial growth. Furthermore, the cartridge's ability to produce water of low conductivity will be reduced.

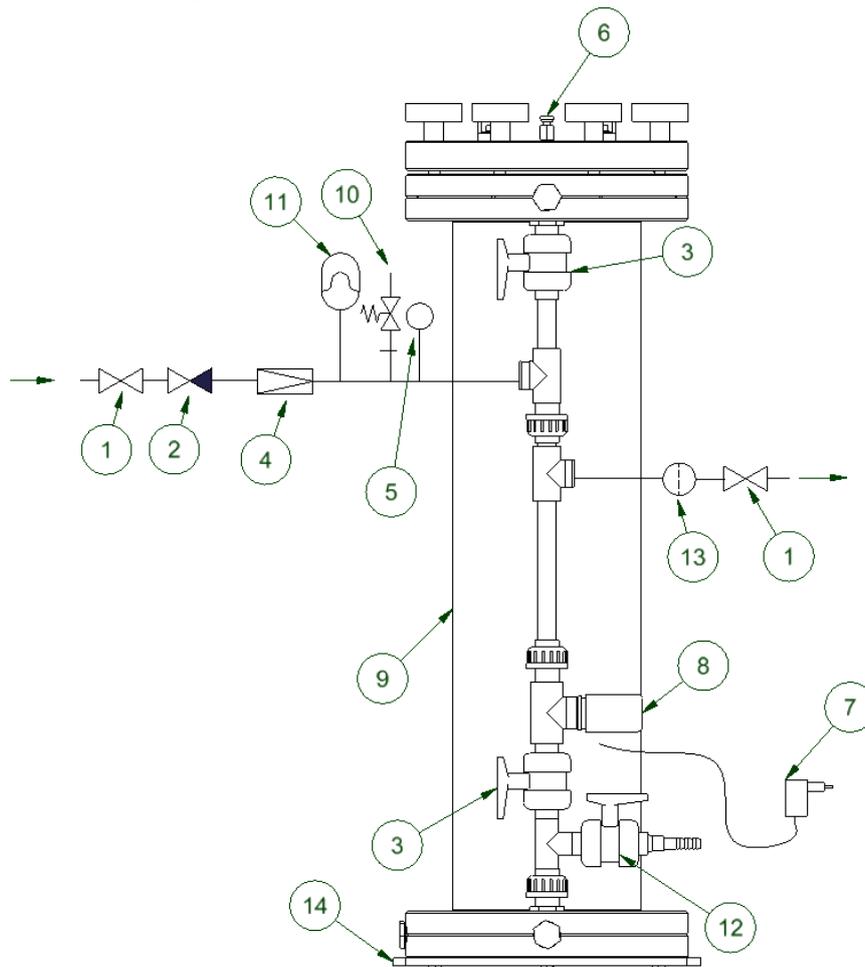
### 2.5. Useful life

Cartridges that are stored at refrigerator temperature are to be used within six months from the delivery date. When stored at room temperature, use the cartridges within three months. It is of greatest importance for the useful life of the cartridges to store and replace them under as sterile conditions as possible in order to minimize the risk of contamination from the surroundings and the operator.

## 3. Installation instructions

### 3.1. Pressure installation

- Place the SILEX system on a level surface. For attachment to the level surface, a triangular mounting plate is included, which is tightened on the back of the bottom flange with the three screws already installed.
- The system is designed for a maximum pressure of 6 bar. Install a pressure reducing valve (pos. 4), a diaphragm pressure extension tank (pos. 10), or a relief valve (pos. 11) in the unit inlet, if the maximum system operating pressure can be exceeded – either due to operating pressure, reflux in the installation, or a temperature increase in the liquid during a standstill.
- Provide a stop valve (6 bar) on the unit inlet and outlet to shut off the water supply during cartridge replacement.
- The maximum system flow is 5 l/min. If this flow can be exceeded, install a valve on the unit inlet. Set the valve's maximum flow to 5 l/min. at maximum mains pressure and then seal the valve.
- The water is fed through a ½" threaded joint. The outlet line, including valves and fittings, must be of corrosion-resistant material.
- **N.B.:** A limited discharge of small particles (< 0.5 mm) of ion exchangers cannot be excluded. If such a discharge can harm the subsequent installation in any way, install a suitable filter (pos. 13) after the outlet of the SILEX system.
- Install an adjustable non-return valve (pos. 2) between the mains piping and the SILEX installation. Check and follow local regulations.



*Pressure installation*

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1. Stop valve	6. Airscrew	11. Relief valve, if any
2. Non-return valve	7. Transformer	12. Bottom drain
3. Regulating valve	8. Conductivity meter	13. Filter
4. Pressure reducing valve, if any	9. SILEX unit	14. Mounting plate
5. Pressure gauge	10. Diaphragm pressure extension tank, if any	

According to EN 61010-1 item 1.4, the system is installed under installation category II.  
Transformer shall comply with EN 60742

## 4. Conductivity meter

The electronic conductivity meter continuously registers and displays the quality of the demineralized water.

### 4.1. Secon V3-10

The water quality is expressed as the water's capability to conduct an electric current. Conductivity is measured in  $\mu\text{S}/\text{cm}$ . A high conductivity means plenty of mineral salts in the water and thus a poor water quality. Conversely, a low conductivity means few mineral salts and a good water quality.

- Connect the supplied transformer 100-240VAC/9-24VDC to the conductivity meter. Plug the transformer into a 240 V wall socket and switch it on.
- The meter is now in operation and the water conductivity is displayed on the scale of the conductivity meter.



*Conductivity meter Secon V3-10*

● ● ● ○ ○	$< 0.1 \mu\text{S}/\text{cm}$
○ ● ● ○ ○	$< 0.5 \mu\text{S}/\text{cm}$
○ ○ ● ○ ○	$< 1.0 \mu\text{S}/\text{cm}$
○ ○ ○ ● ○	$< 5.0 \mu\text{S}/\text{cm}$
○ ○ ○ ○ ●	$< 10 \mu\text{S}/\text{cm}$
○ ○ ○ ○ ●	$> 10 \mu\text{S}/\text{cm}$

## 5. Operating instructions

During normal operation of the SILEX system, the operator must monitor the conductivity meter regularly to make sure that the specified value for the application is not exceeded.

When the conductivity is too high for the application, or the ion exchangers are exhausted, replace the cartridge by a regenerated cartridge.

### 5.1. Replacing the SILEX cartridge

- Close the stop valve in the inlet.
- Close the stop valve in the outlet.
- Loosen the airscrew to depressurize the system.
- Unscrew the eight hand screws and remove the top flange.
- Open the bottom drain valve to discharge water from the system.
- Remove the exhausted cartridge. Hang it to let it drip-dry! Complete drying-out will destroy the ion exchangers!
- Open the plastic bag with the new cartridge. Slowly lower the cartridge into the tank using the bag as a funnel.
- Remove the plastic bag and carefully tug the closure device of the cartridge to avoid creases on the sides.
- Vibrate the tank by tapping it to let the cartridge settle completely. It is very important that the cartridge fits tightly inside the unit.
- Mount the top flange and tighten the hand screws. Before tightening, make sure that gasket, O-ring and bearing surfaces are completely clean.
- Close the bottom drain valve and open the airscrew.
- Open the inlet stop valve. Close the airscrew when water flows out of it.
- Open the outlet stop valve. The SILEX system is now in operation again.

### 5.2. Handling the exhausted cartridge

- Place the exhausted, still moist cartridge in the plastic bag. Seal the bag and place it in the original packaging.
- Dispatch the cartridge to your regeneration centre.

IF THE ION EXCHANGERS DRY OUT THEY STOP WORKING AND CANNOT BE RETURNED FOR REGENERATION
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## 6. Disposal of system

When the system or parts thereof are no longer in use, they must be disposed of through approved public or private systems in accordance with environmental regulations.

When in doubt, please contact your local EUROWATER office or supplier.

## 7. Consumables and selected spare parts

EUROWATER plants last for many years, but consumables such as filter media, salt for regeneration, ion exchangers, and filters have a certain capacity or useful life and must be replaced at intervals.

We stock all consumables and spare parts necessary to keep your water treatment plant running for years, even decades.

We recommend that you contact EUROWATER to learn about your options before ordering consumables and spare parts.

### 7.1. Cartridges and regeneration

SILEX cartridges have a limited capacity and must be replaced when exhausted. EUROWATER has a well-established cartridge return system ensuring almost no system downtime.



*A regenerated cartridge with a mix of anion and cation exchangers, ready to be charged into the SILEX system.*

### 7.2. Spare parts

A list of common spare parts is available at your request.



*Spare parts list with detailed 3D drawings.*