MEMBRALOOP

SFC Umwelttechnik

Clean Water. Engineered for the World.

MEMBRALOOP® FILTER HOSE

# OPERATION MANUAL

INNOVATIVE AND FLEXIBLE MEMBRANE FILTRATION

DEVELOPED AND MANUFACTURED IN EUROPE

Version
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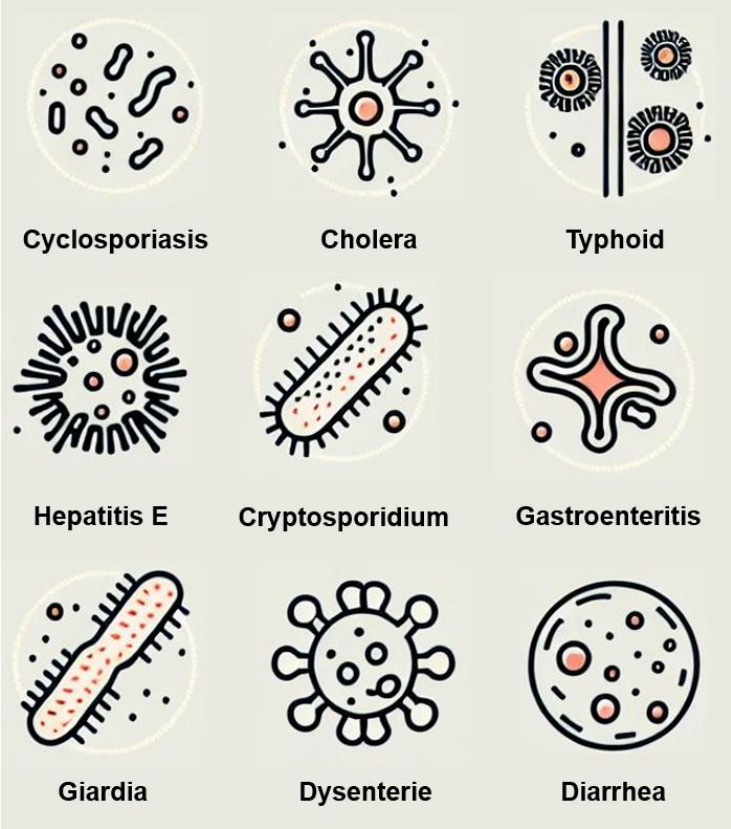
# Content

# 1 General Description

The **Membraloop®** filter hose was developed to provide customers with a lightweight, mobile and ready-to-use water treatment system. The system has a filter capacity of up to 15 l/min (depending on pressure and temperature, assuming proper manual and chemical cleaning). For higher flow rates, the units can also be connected in parallel. A **maximum inlet pressure** of **6 bar** must be maintained.

The pore size of the **Membraloop®** ultrafiltration membrane, averaging 20 nm (0.02 µm), safely removes microbiological contaminants (e.g., cyclosporiasis, cholera, giardia, typhoid, hepatitis E, etc.) as well as suspended substances (sediments, colloids, clay, dust, particulate metals, etc.) from the raw water, thus meeting the WHO goals of "high protection" and "highly protective", respectively. The membrane acts as a physical barrier. Dissolved substances (e.g., Na+, K+, Ca2+, Cl-) are not removed.



# 2 Safety Information

- Read the operating manual carefully and make sure you understand it correctly!
- Use the unit exclusively for the described purpose!
- Do not leave children unattended with the **Membraloop®** filter hose!
- The **Membraloop®** filter hose is a "point-of-use" (POI) treatment system – treated water must be stored in clean (preferably disinfected) containers and consumed within half a day (recontamination is possible)! Always fully vent the hose through the vent valve before use.
- Do not connect pumps or inlet lines with a pressure higher than 6 bar to the unit! Check the pressure with a manometer before and after the unit.
- Only open the **Membraloop®** filter hose when it is depressurised!
- Open and close the connections of the Membraloop® carefully to prevent injuries to your fingers!
- Do not use raw water with a temperature above 40°C!
- Use only raw water free of algae, plant residues, or other coarse particles! In such cases, pre-filtration is necessary.
- Wear protective clothing, gloves, and safety goggles during chemical cleaning!
- **NEVER** mix NaOCl and citric acid during the cleaning process!

# 3 Accessories

Not included but available as an accessory:

**Membraloop®** filter hose set: Item No.: 240015

- Raw water hose - DN 19mm, 4 m length, with GEKA XK drinking water coupling on both ends
- Treated water hose - DN 19mm, 2 m length, with GEKA XK drinking water coupling on one end
- Raw water tank container fitting, plastic ¾" AG
- 2 brass GEKA "K" drinking water couplings with ¾" IG
- 1 brass GEKA coupling with ¾" IG, rotatable

**Membraloop® Zero Cleaning Set:** Item No.: 211091

- Cleaning agents (1 pack = 5 packages of 350 g each)

# 4 Commissioning

Before commissioning, all closures must be checked for tightness.

**Step 1:**

Before the first use, please clean all pre- and post-maintained parts, such as raw water tanks, connecting pipes/hoses, branches, and extraction points with clear drinking water and ideally carry out disinfection. Commercially available products can be used for disinfection. Membrane compatibility must be ensured.

**Step 2:**

Connect the **Membraloop®** filter hose to the raw water and clean water hose and ensure the system is tight. The filter hose is equipped with ¾" male connectors on both sides. Start the pre-pressure pump. A maximum pre-pressure of 6 bar must be maintained.

**Step 3:**

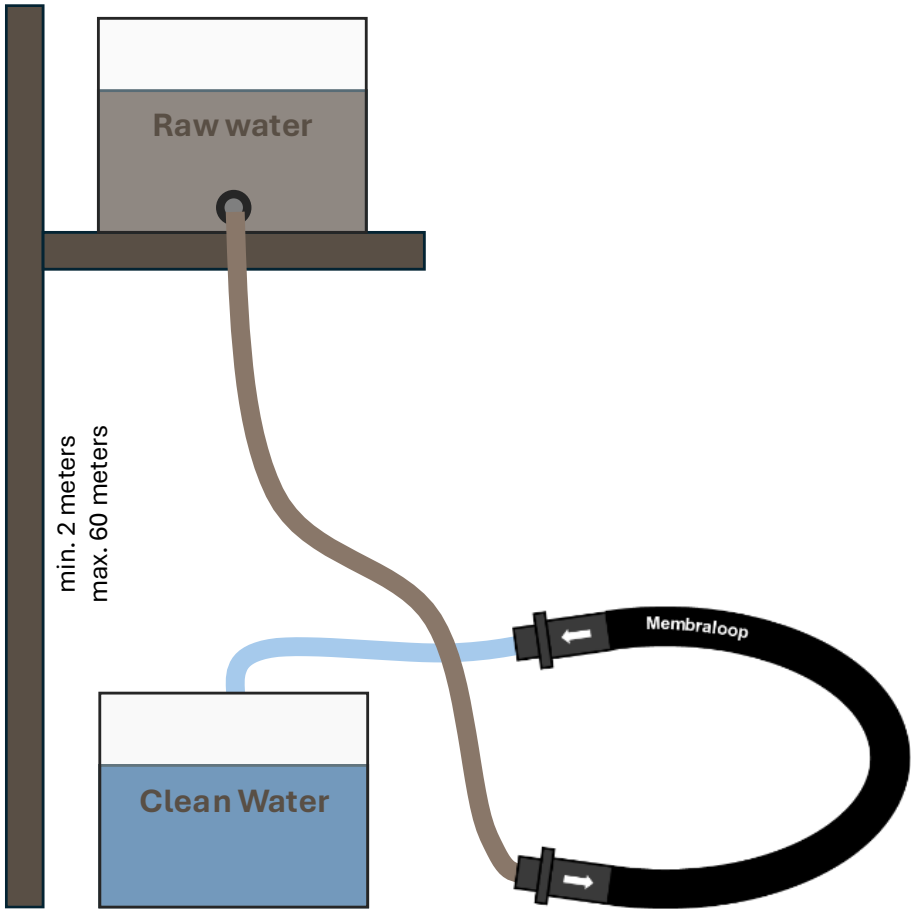
During the start-up phase, foam formation occurs as air trapped in the system is pushed through the membrane. This effect is harmless and can occur again with each new commissioning after prolonged downtime or emptying.

**→ The Membraloop® filter hose is ready for use!**

# 5 Installation Diagrams

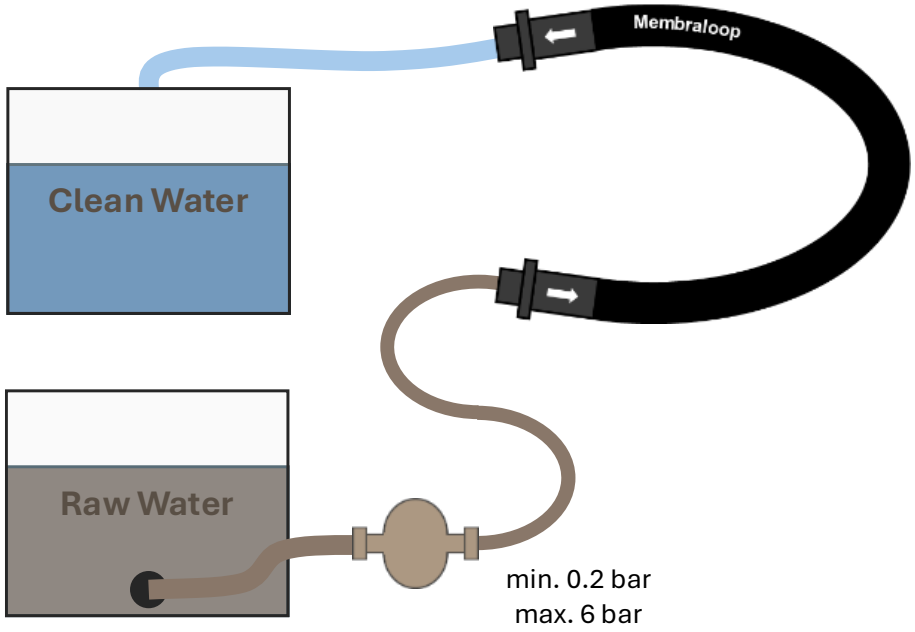
Ensure pre-filtration of raw water (insects, leaves, etc.) to prevent damage to the filter cartridge and the pump. Below are schematic diagrams for both gravity- and pump operation.

## 5.1 Gravity Operation



## 5.2 Pump Operation

Connect the pump between the raw water tank and the **Membraloop®** filter hose. The use of similar pumps (e.g., suction pump) is also possible. Ensure that the **maximum pressure** does not exceed **6 bar**.



## 5.1 Expected Flow Rate

The flow rate depends on the temperature and the quality of the raw water (solid content). The values mentioned below assume regular manual and chemical cleaning (see Chapter **6**).

| **Level Difference [m]** | **10** | **20** | **30** | **60** |
|---|---|---|---|---|
| **Pressure [bar]** | **1** | **2** | **3** | **6** |
| **Min. Flow Rate [l/min]** | **2,5** | **5** | **7,5** | **15** |
| **Limit chemical Cleaning [l/min]** | **1** | **2** | **3** | **6** |

# 6 Cleaning

Open and empty the filter hose at regular intervals depending on the degree of water contamination. Remove the sediment residues inside the hose.

## 6.1 Manuel Cleaning

Turn off the pressure pump and disassemble the **Membraloop®** filter hose. Before disassembly, ensure that the entire system is pressure-free. After emptying the hose, sediment residues can be removed by flushing the raw water side.

## 6.2 Chemical Cleaning

In general, the **Membraloop®** filter hose should be chemically cleaned once a year to ensure optimal cleanliness and appropriate flow rate. If the flow rate is less than 1 liter per minute (per bar), the filter hose should be chemically treated in addition to the annual cleaning. You can obtain the appropriate cleaning agent from the manufacturer.

**CAUTION:** NEVER mix different cleaning agents such as NaOCl and citric acid! During chemical cleaning, use professional protective clothing (gloves, body, eye, and face protection).

1) Disassemble and manually clean according to Chapter 6.1.
2) Close the clean water side with a cap.
3) Dissolve the cleaning agent in water and fill it into the **Membraloop®** filter hose. Close the cap on the raw water side.
4) Shake the **Membraloop®** filter hose back and forth for 30 seconds, then let it lie horizontally for 1 hour.
5) Shake it back and forth for another 30 seconds, open the raw water side, and empty the **Membraloop®** filter hose. Rinse several times with clean water to remove the cleaning agent.
6) Open the purified water side and reinstall the **Membraloop®** filter hose into the piping system.
7) Tighten the closures and check for tightness.
8) Restart the pressure pump.

If you do not wish to carry out the cleaning yourself, there is the option of having it cleaned by the manufacturer. Therefore, please contact us for this.

# 7 Problem Solving

**The Membraloop® filter hose is leaking**

→ The connections may not be sufficiently tightened. Tighten the connections again using an appropriate tool.

**The turbidity in the purified water is above 3 NTU and particles are still visible**

→ There are likely leaks in the system. Check the connections. Replace damaged parts as needed.

**No flow / insufficient flow / flow changes**

→ Check the pre-pressure pump to ensure there is sufficient pressure.

→ Check if there is enough water in the raw water tank.

→ Check if air is being drawn in from the raw water tank.

→ There may be air pockets in the hose system. The system usually self-vents after a short time in operation.

→ Perform a chemical cleaning (see **Chapter 6**).

# 8 Contact

**For any questions, we are always at your disposal:**

SFC Umwelttechnik GmbH
Julius-Welser Str. 15
5020 Salzburg, ÖSTERREICH
www.sfcu.at
office@sfcu.at
Tel.: +43 662 43 49 02

Or ask our local partners directly.