



Congratulations on your purchase! Thank you for buying a LILIE pump.

Pumps are the heart of any camper van and caravan water installation. The long-life diaphragm pumps quickly build up pressure in the closed water system and thus move the water through the pipes. Our pumps are manufactured by our partners according to our development specifications, which are based on over 30 years of experience.

In this manual, you'll find all the information you'll need to install and reliably operate your LILIE pump.

All of the manual's contents apply to the following pump series:

Fresh water pumps	Drinking water pumps according to DIN 2001-2
<p>CLASSICSERIE™ SOFTSERIE®</p> 	<p>IQflo® CLASSICSERIE™ WeißGELB® SOFTSERIE® WeißGELB® SMARTSERIE™</p> 

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1 Installation situation and use

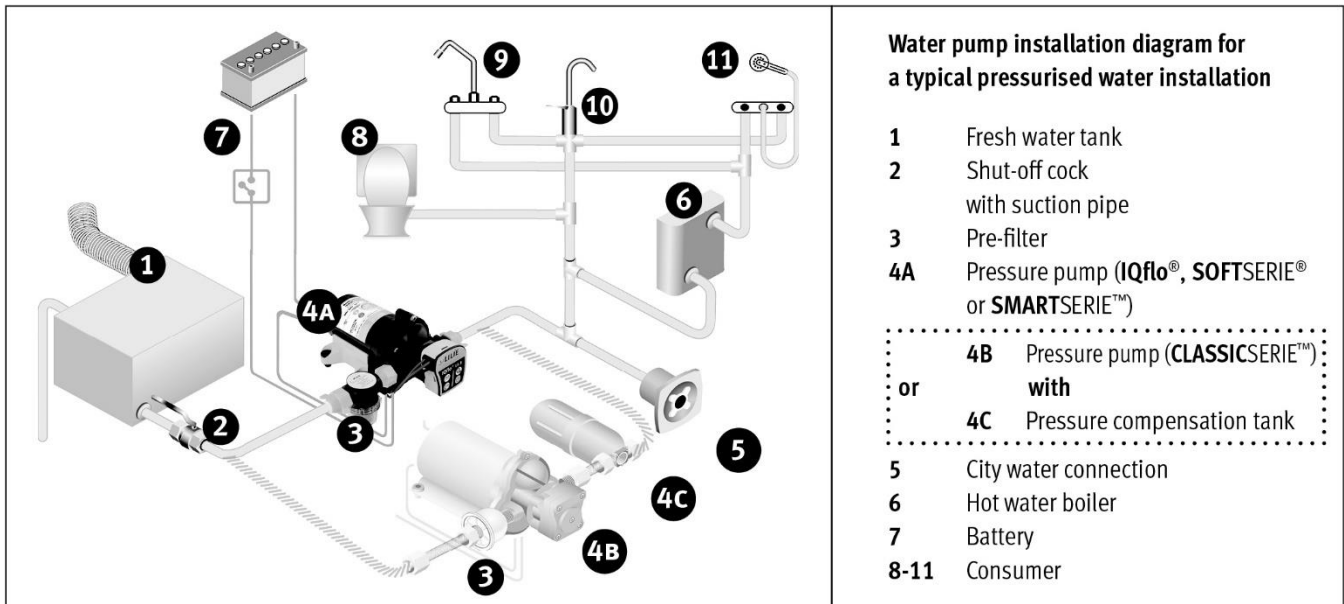
You'll get the most pleasure and greatest benefit out of the pump if you use it as a complete system that has been specifically developed and optimised for this area of use as opposed to individually – or supplemented by individual additional parts. We recommend that you use our LILIE WeißGELB® drinking water system for this purpose. In our catalogue (available at www.lilie.com), you'll find suitable connection and installation material for your LILIE pump in the 'Water tuning' section.

The pumps are designed for use in the dry interior of a camper van. They are not watertight or resistant to splash water or acids.

The pumps described in this manual are designed for intermittent operation and are not suitable for continuous operation. The switch-on duration and length of the intervals can be found in the complete overview of the pumps in our current catalogue. Our pumps for the caravanning sector can run for 20 minutes at a time without any problems, after which a longer break is necessary.

2 Installation

The assembly process is intended to make operating the pump as quiet as possible while guaranteeing sufficient pumping characteristics, the lowest possible pressure load and easy access for maintenance work. This can be achieved by following the instructions below.



2.1 Positioning the pump

Generally speaking, we recommend assembling the pump in a heated raised floor. Where this is not possible, the pump should be installed on the base plate. Assembly in cabinets, on benches, on thin toilet walls and generally on vibration-transmitting resonating bodies and surfaces should be avoided in any case.

For optimum performance, the pump's installation location should meet the following criteria:

- As close to the tank as possible, or two metres away at most
- An easily accessible location (easy access to the coarse filter during maintenance)
- Free space that's as open as possible, with a clearance of 10 cm on all sides (sufficient ventilation and protection against overheating)

The pump can be assembled in an upright or a suspended position; if assembled in a suspended position, the pump head should be facing downwards, so that – in the unlikely event of a leak – any water escaping cannot get into the motor.

Please choose a solid, stable surface (e.g. thick plywood) that does not transmit the pump's vibrations. Padding under the pump improves noise insulation. The pump bases insulate the pump against the assembly surface; not screwing in the fixing screws on the base plate too tightly reduces the noise level.

2.2 Connections and peripheral devices in the water system

Please ensure that all of your water system's components can withstand your pump's maximum pressure.

2.2.1 Connections and sleeves

The pump's connections and the thread of the associated LILIE sleeves are coordinated to one another and are manufactured with the highest precision. The system is designed to be 100% tight without any additional sealing components. Please use only the original connecting sleeves (e.g. LILIE WeißGELB® screw-on sleeve in the 12 mm variant: #8042 or #8044, or in the 10 mm variant: #8040 or #8043) and refrain from using Teflon tape or other sealing components. This can lead to damage to the connecting thread and leakage. The connecting sleeves can be tightened both by hand and with a size 26 open-end wrench. If you cannot exert enough force by hand, use the open-end wrench until the connection is tight.

Our quick couplings (quick fittings) for the SMARTSERIE® with O-rings ensure quick removal when maintenance or access is required.

2.2.2 Hose system

If possible, please use our flexible *LILIE native* or *LILIE Eco native* drinking water hoses with the largest possible inner diameter (min. 10 mm, ideally 12 mm) that have been tested according to DIN 2001-2. The *LILIE native* drinking water hose cushions and reduces vibrations the best in this respect. You can find our drinking water hoses (e.g. #88112 *LILIE native 12x18* as the 'ideal hose') in the 'Water tuning' section of our catalogue. Smaller pipe diameters can lead to cavitation, increased pressure resistance, a restricted delivery rate and increased operating noise.

Our drinking water hoses are very quiet compared to pipe systems. If a pipe system is installed nevertheless, you can reduce the vibrations by using a piece of hose measuring min. 50 cm in length between the pump and the pipe. When rigid pipes are connected directly to the pump, the pump's operational vibrations may be amplified, resulting in louder operating noise and cavitation, leakage or defects in other components.

2.2.3 Complete system and inner diameter / flow optimisation

A straight course and gentle bends and curves in the hoses or pipes allow the water to flow quickly and conveniently. Please, therefore, avoid tight bends or corners in the pipes, especially directly upstream and downstream of the pump.

- Constrictions in the pipe cross-section, especially in the pump inlet and outlet, should be avoided if possible.
- This also applies to shut-off and drain cocks, as well as elbow connections with a smaller inner diameter.
- Please use water taps with a large outlet. We recommend using 35 mm cartridges at least, but 40 mm ones are better.

2.2.4 Water distribution block and connector

Please use a water distribution block with a correspondingly large inner diameter, e.g. our flow-optimised water distribution block #24207 *LILIE WeißGELB® five outflows* instead of individual T-pieces.

The fewer connectors used in the water installation, the better and more reliable the overall water flow. Please, therefore, use as few connectors as possible. Where necessary, please use connectors with a high flow rate, e.g. #69510 *LILIE WeißGELB® Y-connector*.

2.2.5 Pre-filter

Please use a suitable pre-filter with 50-mesh, a mesh width of approx. 0.25 mm, to prevent contamination of the pump with dirt particles, e.g.

- for **IQflo®**, **CLASSICSERIE™** and **SOFTSERIE®**: #LP200164 ½" screw-on filter
- for **SMARTSERIE™**: #LP200161 pre-filter with quick fittings

2.2.6 Fasteners

When laying ring pipes, please ensure that vibration-reducing fasteners are used, e.g. #50309 *Lilie WeißGELB® fastening clamp*.

2.2.7 Drinking water filter

- We recommend using our *Certec® filter unit | 10" (#20593)* or the *LILIE biolit 97 filter unit (#20293)* because they are coordinated to the *LILIE WeißGELB®* drinking water system and the pumps for the caravanning sector. Place drinking water filters on the pump's pressure side (not in the suction pipe).
- Filter units generally have a pressure-reducing and flow-reducing effect in the water system. This phenomenon is minimised with *Lilie* filter units. In this case, the **IQflo®** and **SMARTSERIE™** pumps throttle the delivery rate.
- If your application requires the use of a filter unit with a high pressure loss, it may be advisable to use a stronger pump.

2.2.8 Pressure compensation tank

- If you are using a **CLASSICSERIE™** pump in your system, we recommend that you use a pressure compensation tank (e.g. #LP1805 *pressure compensation tank*).
- No pressure compensation tank is required in connection with **IQflo®**, **SOFTSERIE®** and **SMARTSERIE™** pumps. If you do not want to dismantle your existing pressure compensation tank, we recommend that you depressurise it.

2.3 Electrics

Please connect the pump to the battery and install a circuit breaker. We recommend fusing with a 15 A fuse in the (red) positive line. When used in the marine sector, a UL-approved marine switch should be used.

The cross-section of the cables used for power supply and earthing depends on the distance between the pump and the power source:

- 0 m – 7.5 m 1.5 mm² or AWG 16 (AWG = American Wire Gauge)
- 7.5 m – 20 m 2.5 mm² or AWG 14 (minimum requirement with **IQflo®**)
- 20 m – 30 m 4.0 mm² or AWG 12

The pump must be earthed, e.g. on the vehicle frame or at the battery's negative pole.

- ⓘ If your camper van has a whisper control or a similar control device, it must be designed for the pump's maximum current consumption.
- ⓘ Never remove or bypass the fuse integrated in the positive line; it protects the pump's electronics.
- ⓘ We recommend that you switch off the power supply to the pump when you leave your camper van or when it is unattended.
- ⓘ The minimum voltage must be 9 volts for **IQflo®**. If the voltage drops below this threshold, the integrated undervoltage protection switches off the pump.

3 Individual settings on the pump

The pressure switch and bypass are preset at the factory. Usually, they don't need to be adjusted. If your specific operating conditions require adjustment, please proceed as follows:

3.1 IQflo®

Thanks to its intelligent control, no individual settings are required for the IQflo®. Whether you are flushing the toilet, taking a shower, or have several taps running at the same time, the IQflo® automatically adjusts to your needs.

You don't have to adjust the sensor-controlled electronics integrated on the pump head. It has overvoltage and undervoltage protection. If the pump shuts down when one of these thresholds is reached, it automatically restarts as soon as the required operating voltage is restored.

3.2 CLASSICSERIE™ – pressure switch

The pump's shutdown pressure can be increased or decreased to a limited extent (0.5 bar / 7 psi). The shutdown pressure ...

- can be increased by turning the screw in the middle of the pump head clockwise.
- can be reduced by turning the screw in the middle of the pump head anti-clockwise.

Start with small changes (max. half a turn). Avoid major changes and turning it clockwise or anti-clockwise all the way. This can permanently damage the pump.

3.3 SOFTSERIE® – pressure switch and bypass

The mechanical bypass control reduces the pump's delivery rate if the possible flow rate is reduced, e.g. at the tap. The bypass value is preset and is approx. 0.3 bar above the pump's shutdown pressure. The pressure switch and the bypass control are optimally coordinated to one another to ensure the pump's optimum pumping characteristics. When making adjustments, both values must therefore always be adjusted appropriately.

If the pressure switch is set too high, it may not switch off. The shutdown pressure ...

- can be increased – by turning the screw in the middle of the pump head clockwise.
- can be reduced by turning the screw in the middle of the pump head anti-clockwise.

If the bypass value is too low, the pressure switch's switching point can no longer be reached and the pump no longer shuts down. The value that the bypass starts to work at

- can be increased by turning the screw on the bypass clockwise.
- can be reduced by turning the screw on the bypass anti-clockwise.

3.4 SMARTSERIE™

The pump's electronics and the whisper control regulate the motor speed and the pump's delivery rate as needed, thus ensuring low noise levels and power consumption. This means previously unknown, precise water delivery as required, without loud starting noises, splashes or abrupt fluctuations.

There is no need and no option for individual settings for the **SMARTSERIE™** pumps.

4 Start-up

The drinking water pumps are delivered in a dry state to avoid microbial contamination inside the pump during transport and storage. This means that the pump requires slightly more time to suck in water from the dry state when it is first started up.

5 Disinfection

We recommend disinfecting the entire drinking water system with hydrogen peroxide when the system is started up and once a year, or at shorter intervals if the pump is subjected to intense use. You are welcome to use the *#56200 Lilie DW disinfectant* for this purpose. Please proceed as follows:

1. Pour the required amount of LILIE DW disinfectant into the tank
2. Fill the tank with water
3. Set the pump switch to <OFF>
4. Open all tapping points
5. Switch on the pump using the pump main switch
6. Close the tapping points when water is running from all tapping points. The pump now shuts down automatically.
7. Allow to stand for at least six hours (observe the exposure time with regard to tank size and concentration)
8. Once the contact time has elapsed, drain the contents of the tank. Fill the system with fresh water and rinse the disinfectant solution from the entire drinking water system.
9. Please also observe the manufacturer's instructions for the disinfectant used, especially for the correct dosage.

The described procedure corresponds to the German Drinking Water Ordinance according to DIN 2001-2, which is also valid for the entire European Union.

6 Maintenance

Drinking water systems require regular maintenance to ensure an even flow of drinking water. The following measures should be performed regularly:

- Clean your installation's pre-filter with clear water
- Clean the aerators of the taps and shower heads
- Check and clean the coarse filter
- Clean / disinfect the pipes
- Check screw connections to see if there are any leaks or cracks

If there is a risk of frost, the pump and the pipes should be protected against freezing, e.g. by draining or filling with suitable antifreeze (see the following section).

Lack of maintenance is one of the most common causes of loss of performance and premature pump failure. Deposits on valves and diaphragms may lead to loss of flow or internal leakage over time. An indicator for this is – for example – the pump occasionally, briefly starting even though there are no consumers active.

① For appropriate measures, please also refer to the relevant information from your camper van manufacturer!

7 Winterproofing the pump

If water freezes in the hose or pipe lines, this can damage the pipes and the pump. The best protection against frost damage such as this is a non-toxic antifreeze for fresh water, e.g. *#56601 Winter Ban antifreeze* available from the camper van centre.

1. Open all tapping points and completely empty the tank
2. Close all tapping points
3. Pour at least ten litres of a mixture of Winter Ban and water into the tank.
4. Then open the tapping points individually until coloured liquid emerges.
5. Close all tapping points; switch off the pump main switch.



Do not use car antifreeze to winterproof drinking water pipes. These solutions are highly toxic. Swallowing a

solution such as this may cause injury or death.

You can also drain all the water from the system:

1. Empty the water tank. If there is no drain valve on the tank, open all taps and use the pump (or alternate between running for 15 minutes and taking a break for 15 minutes) to completely empty the tank.
2. Open all taps (including the valve or drain located at the lowest point in the pipe system) and pump out the water remaining in the pipes. Then switch off the pump.
3. Disconnect the pipe system from the pump at the inlet and outlet connection and collect the remaining water in a tub.
4. Switch the pump on again and let it run until all the water has been removed.
5. All taps must remain open to prevent frost damage caused by residual water in the system.

8 **Warranty**

The warranty for **CLASSICSERIE™** and **SOFTSERIE®** is 24 months, and for **SMARTSERIE™** it is 36 months, in each case from the date of manufacture; it applies to business partners who have purchased the pump from us. The warranty / running time is limited to the motors' service life. For LILIE pumps for the caravanning sector, this is approx. 2,000 operating hours.

We do not provide any warranty in the event of improper use or handling:

- Damage to the inlet and outlet spigots due to unsuitable connection nozzles being used
- Impurities inside the pump (in the event of operation without a pre-filter)
- Unsuitable or improper use or operation
- If the pump is used outdoors (no water protection according to IP et seq.)
- Dry running or continuous operation (specifically developed for intermittent operation, i.e. a longer break must be taken after 20 minutes of continuous operation)
- Faulty assembly by the contractual partner or third parties
- Natural wear and tear and incorrect or negligent handling
- Pumped medium other than fresh or drinking water
- Frost damage
- Improper modifications or repair work carried out by the contractual partner or third parties without our prior approval
- Unsuitable or improper operation or use (e.g. other purposes)
- Opened and improperly reassembled pumps

If you have any complaints, please contact us first.

We do not accept unannounced and freight forward returns.

9 **Spare parts**

You will find spare parts for your pump in our catalogue, which you can download from www.lilie.com.

Our parts kits contain comprehensive repair instructions.



Spare parts for all LILIE diaphragm pumps

You can carry out almost all repairs yourself.

An installation manual is enclosed for quick and easy assembly.

We hope you enjoy using your drinking water system for a long time to come.