

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

Pumps are the heart of any camper van and caravan water installation.

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:

**CLASSICSERIE™ WeißGELB®:** #LP204/M, #LP403/M, #LP471/M, #LP473/M, #LP061, #LP209/M

**SOFTSERIE® WeißGELB®:** #LP4121/M, #LP4122/M, #LP4142/M, #LP4144/M, #LP4242/M, #LP4145/M, #LP4155/M

**CLASSICSERIE™:** #LS204/M, #LS403/M, #LS471/M, #LS473/M, #LS061

**SOFTSERIE®:** #LS4121/M, #LS4122/M, #LS4142/M, #LS4143/M, #LS4144/M, #LS4242/M

**SMARTSERIE™:** #LP1001, #LP1002, #LP1009, #LP1014, #LP1019, #LP1021

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

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## 1 Installation situation and use

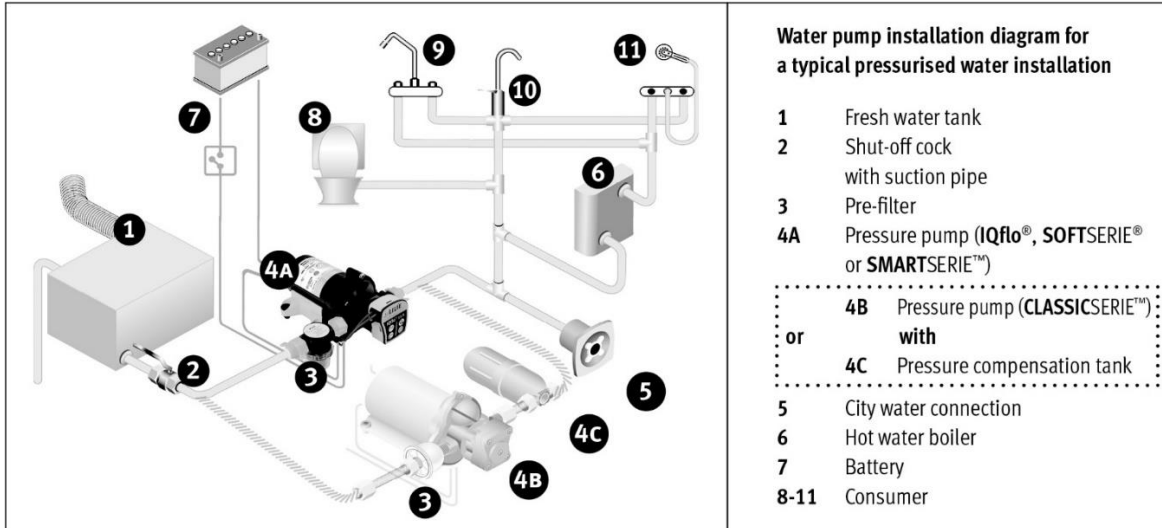
You will get the most pleasure and benefit from the pump if you use it with all components of the LILIE WeißGELB® drinking water system for this purpose. In our catalogue (available at [www.lilie.com](http://www.lilie.com)), you'll find suitable connection and installation material for your LILIE pump 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. 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)
- If possible, open space with free space 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 – water cannot enter 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. By using a pressure reducer (#25012) the pressure can be adjusted to sensitive components, e.g. in front of a toilet or a hot water boiler.

#### 2.2.1 Connections and sleeves

The pump's connections and the thread of the associated LILIE sleeves are coordinated to one another. 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 should be installed hand-tight and then tightened half a turn using a size 26 (SW26) open-ended wrench.

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 (LILIE Drinking-Water-Hoses)

Please use our flexible drinking water hoses LILIE native or LILIE Eco native, tested according to DIN 2001-2, with the largest possible inner diameter (min. 10 mm, ideally 12 mm). The LILIE native drinking water hose dampens and reduces vibrations best. 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.

### 2.2.3 Complete system and inner diameter / flow improvement

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 the appropriate flow-optimized LILIE water distribution block with 3-5 outlets instead of individual T-pieces.

The fewer connectors used in the water installation, the better and more reliable the overall water flow will work. Where necessary, please use high flow connectors, e.g. #69510 LILIE WeißGELB® Y-connector.

### 2.2.5 Pre-filter

Please use the *Lilie*-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 CLASSICSERIE™ and SOFTSERIE®: #LP200164 ½" screw-on filter
- for SMARTSERIE™: #LP200161 pre-filter with quick fittings

### 2.2.6 Fasteners

When laying ring cables, please make sure to use a vibration-reducing fastening, e.g., #50309 *Lilie WeißGELB® fastening clamp* or #T15 *fastening Holder T-Clip*.

### 2.2.7 Drinking water filter

- We recommend our *Certec® Inline Compact Turbo Filter System (#20550)*. This is system-modularly adapted to the LILIE WeißGELB® drinking water system and the pumps for the caravanning sector.
- Place drinking water filters on the pressure side of the pump (not on the suction side).
- Filter systems generally have a pressure-reducing and flow-reducing effect in the water system. With *Lilie* filter systems, this phenomenon is minimized. SMARTSERIE™ pumps will throttle the flow rate in this case.
- If your application requires the use of a filter system with a high pressure drop, the use of a more powerful pump or increased shutdown pressure may be recommended.

### 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 (#LP1805 *pressure compensation tank*).
- In connection with SOFTSERIE® and SMARTSERIE™ pumps, no pressure compensation tank is required. If you do not want to dismantle your existing pressure compensation tank, we recommend that you depressurise it.

Please connect the pump to the battery and install a circuit breaker. We recommend fusing with a suitable fuse in the (red) positive line. Please note the information on the label. 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 mm<sup>2</sup> or AWG 16 (AWG = American Wire Gauge)
- 7.5 m – 20 m 2.5 mm<sup>2</sup> or AWG 14
- 20 m – 30 m 4.0 mm<sup>2</sup> or AWG 12

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

- ① If your camper van has a whisper control or a similar control device, it must be designed for the pump's maximum current consumption.
- ① Never remove or bypass the fuse integrated in the positive line; it protects the pump's electronics.
- ① We recommend that you switch off the power supply to the pump when you leave your camper van or when it is unattended.
- ① Please check your battery for its charge status and for a well-adjusted on-board system. Regularly check the charge and discharge cycle of your battery. An optimal voltage for 12 V pumps is 13.8 V. If the voltage is lower than this, it could cause behaviour changes. If your battery power is too low during stand-alone operation, it may also lead to possible behaviour changes of the pump.

## 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:

### 2.3 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.

### 2.4 SOFTSERIE® – pressure switch and bypass

The mechanical bypass control reduces the flow rate of the pump when the flow rate is reduced, e.g. by partially closing a water tap. The bypass value is preset and is approx. 0.3 bar below the shutdown pressure of the pump. For an optimal delivery behavior of the pump, the pressure switch and the bypass control are adjusted to each other. Therefore, both values must always be adjusted when making adjustments.

Bypass and pressure switch are ideally matched when the pump switches off quickly after closing all tapping points and delivers at low flow rate without pulsating when opening a tapping point (the upper circle in the picture is the pressure switch and the lower circle is the bypass).

Ideally, the setting of the shutdown pressure and the bypass value works when it is performed with a running tap that is only partially open.

If the Shutdown pressure is set too high, it may cause it not to shut off. If it is set too low, it will shut off too soon and the pump may sputter or pulse. You can adjust the shutdown pressure...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.

To do this, use a screwdriver with cross recess PH2 for LP-Pumps and an Allen key SW2 for LS-Pumps. Note the initial position and change it by a maximum of two full turns (in steps of max. one quarter turn).

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 bypass value....

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

Use an SW2 Allen key for this purpose. Note the initial position and change it by a maximum of two and a half full turns (in steps of max. one quarter turn).

### 2.5 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.

## 3 Individual settings on the pump

The drinking water pumps are delivered in a dry state to avoid water treated with hydrogen peroxide 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.

To ensure that all pumps function properly after installation, it is necessary to bleed your drinking water system. To do this, open all water tapping points and let the pump run for one to two minutes. Please close all water tapping points one after the other. It is advisable to perform the bleeding also after a longer standstill of the pump and after winter maintenance.

## 4 Disinfection (Lilie-TW-Disinfector #56200)

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. 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.

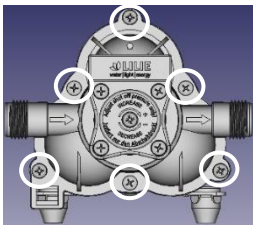
The described procedure corresponds to the German Drinking Water Ordinance according to DIN 2001-2, which is also valid for the entire European Union.

## 5 Maintenance

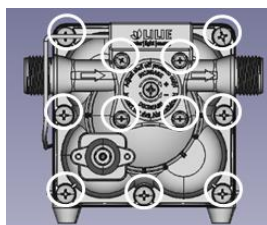
Potable water systems require regular maintenance to ensure a consistent flow of potable water. The following should be done on a regular basis:

- Cleaning the pre-filter of your system with clear water.
- Cleaning the aerators of the faucets and shower heads.
- Checking and cleaning the coarse filter.
- Cleaning/disinfecting pipes.
- Checking fittings for leaks or cracks.
- Clean valves and diaphragms.
- Open the pump head by loosening the outer screws. (For the fresh water series these are Phillips screws (PH2), for the potable water series and for the SMARTSERIE™ these are Torx screws).
- For the SOFTSERIE™, first loosen the four screws of the pressure switch before loosening the remaining eight screws

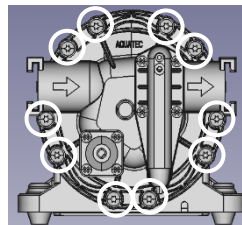
CLASSICSERIE™



SOFTSERIE™



SMARTSERIE™



- Carefully clean valves and diaphragms under hot running water, preferably with a toothbrush.
- If necessary, remove particles in and under the valves additionally with tweezers.

1. Change the valve set.
2. change the complete pump head.

If there is a risk of freezing, the pump and the pipes should be protected against freezing, e.g. by draining them or filling them with Winterban #56601 (see 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.

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

## 6 Winterizing with Winter Ban

Winter Ban protects against frost damage, corrosion, deposits, germination, aging during longer absence and algae growth at outdoor temperatures as low as -45°C and lubricates pumps and valves. If water freezes in the hose or pipe lines, this can damage the lines and the pump. The best protection against such frost damage is Winter Ban antifreeze #56601. Please apply as follows:

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.

## 7 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.

## 8 Spare parts

You will find spare parts for your pump in our catalogue, which you can download from [www.lilie.com](http://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.

## 9 Disposal

Please dispose of this product in accordance with the applicable legal regulations.

We wish you much and long-term pleasure with your drinking water system!