

QLEEN

PURE WATER CLEANING SYSTEMS

User information



**PURASTART Mini & Maxi
PURASTART Mini Complete set
17041, 17049 & 70044**

Version 01/2023

Introduction to the user information QLEEN PURASTART Mini

Thank you for choosing a QLEEN PURASTART Mini cleaning system from Lehmann.

Before you start the cleaning work, here is some important user information.

Please read these carefully and be sure to observe them.

As the owner of a QLEEN PURASTART Mini cleaning system, please also make absolutely sure that your employees have also read the "PURASTART Mini User Information" and follow the safety and warning instructions.

Please also observe and comply with the "**General User and Safety Information**" (separate publication of Lehmann KG).

This document is the original user information. It is written in German. Copies in other languages are translations of this original user information.

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Country of origin

Federal Republic of Germany

We are pleased that you have chosen our product QLEEN PURASTART Mini/Maxi.

Item number __ 17041
 __ 17049
 __ 70044

Type designation __ QLEEN PURASTART Mini
 __ QLEEN PURASTART Maxi
 __ QLEEN PURASTART Mini Complete set



* Picture shows the QLEEN PURASTART Mini complete set (70044)

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2 General notes and safety instructions

2.1 Instruction structure

This manual will give you an overview of the functions, operation and proper use of our QLEEN PURASTART Mini/Maxi.

Certain symbols in these instructions indicate various information:



The information sign indicates useful tips and information.



The exclamation mark warns of potential dangers and risks

2.2 Safety instructions



Caution: Danger of accident:

- The operating personnel must be adequately trained in the use of the machine.
- The machine must be in perfect condition.
Only set up the machine on firm, straight surfaces.
- Wear sturdy, non-slip footwear with protective toecaps to protect yourself from being crushed by the machine.
- Work on roofs only with appropriate safety equipment.
- Be careful not to get mixed bed resin in your eyes, read the "User Information Mixed Bed Resin Systems" for further safety instructions and handling of the mixed bed resin.
- Do not work with the pole system under high voltage line
! DANGER OF ELECTRIC SHOCK !

3 Description of the QLEEN PURASTART Mini/Maxi

3.1 The PURWATER principle - cleaning with pure water

The high chemical-free cleaning power of PUREWATER is the basis on which the PURAQLEEN principle for cleaning glass and solar surfaces.

In this process, tap water is passed through a granulate bottle. The minerals contained in the tap water accumulate in the mixed bed resin and all salts are removed from the water. The tap water is demineralized by pre-pressure in the granulate bottle and reaches the cleaning head as PUREWATER.

PUREWATER not only has very good wetting properties, but also dries without stains or streaks, even in strong sunlight.

This means that in many cases there is no need to use cleaning solutions. (Exception: greasy, oily or very heavy soiling).

3.2 Sustainability

Our system contributes to the careful and sustainable use of resources for cleaning in times of dwindling resources.

In contrast to the reverse osmosis process, our devices operate in the energy-saving low-pressure range, the pressure of the domestic water supply is sufficient to operate our devices.

In addition, our systems convert 100% of the supplied water into PUREWATER, which can be used for cleaning.

3.3 Water hardness and productivity of the mixed bed resin

The water hardness at the place of use can be obtained from the local water supplier. This allows you to estimate the yield of the granulate bottle.

Depending on the measured value, the following values result for the maximum PUREWATER quantity and cleaning time with a granulate bottle (at a maximum initial value of 50 µS, approximate data):

| German hardness level | Corresponds approximately to conductance | Estimated total amount | | Estimated total cleaning time* | |
|-----------------------|------------------------------------------|------------------------|-----------|--------------------------------|-----------|
| | | Mini 12,5 l | Maxi 25 l | Mini 12,5 l | Maxi 25 l |
| 2,8 °dH | 100 µS | 5100 l | 10200 l | 42,5 h | 85,0 h |
| 5,6 °dH | 200 µS | 2550 l | 5100 l | 21,0 h | 42,0 h |
| 8,4 °dH | 300 µS | 1700 l | 3400 l | 14,0 h | 28,0 h |
| 11,2 °dH | 400 µS | 1250 l | 2500 l | 10,5 h | 21,0 h |
| 14,0 °dH | 500 µS | 1000 l | 2000 l | 8,5 h | 17,0 h |
| 16,8 °dH | 600 µS | 850 l | 1700 l | 7,0 h | 14,0 h |
| 19,7 °dH | 700 µS | 700 l | 1650 l | 6,0 h | 12,0 h |
| 22,5 °dH | 800 µS | 600 l | 1200 l | 5,0 h | 10,0 h |
| 25,3 °dH | 900 µS | 550 l | 1100 l | 4,5 h | 9,0 h |
| 28,0 °dH | 1000 µS | 500 l | 1000 l | 4,0 h | 8,0 h |

* Based on a flow rate of 120 l/h with the 9 mm flexible hose and the angled washing brush.

3.4 How the QLEEN PURASTART Mini/Maxi works

Tap water is required for cleaning with PUREWATER.

This is passed through the mixed bed resin in the granulate bottle and demineralized in the process. See " **Mixed bed resin system user information**" (separate publication of Lehmann KG).

The PUREWATER is conveyed to the cleaning head at the upper end of the telescopic pole via the flexible hose* which is attached to the hybrid telescopic pole*. There it is distributed evenly and sparingly via fine nozzles onto the surfaces to be cleaned.

The hybrid telescopic pole* is made of a strong and lightweight composite material.

When retracted, it has a length of 1.62 m and can be extended to a length of 5.26 m. This results in variable working lengths.

This results in variable working lengths between 2 m (minimum) and approx. 7 m (maximum).

The hose* is 12.5 m long and is made of a robust and flexible material.

The integrated water quality measuring device provides information on the quality of the outgoing PUREWATER.

3.5 Areas of application

Typical applications for the QLEEN PURASTART Mini/Maxi are:

- To restore and increase the energy yield of small solar and photovoltaic systems.
- Clear and streak-free view of windows, window frames, conservatories, glass and greenhouses
- Often difficult to access outdoor advertising surfaces and lighting boxes
- Against intensive soiling by insects on vehicles (train, ship, airplane, truck, car)

3.6 Scope of delivery

QLEEN PURASTART Mini (17041)

- Bottle head with carrying handle and integrated water quality meter
- 12.5 l granulate bottle with screw cap, filled with mixed bed resin
- Shut-off tap
- Instruction

QLEEN PURASTART Maxi (17049)

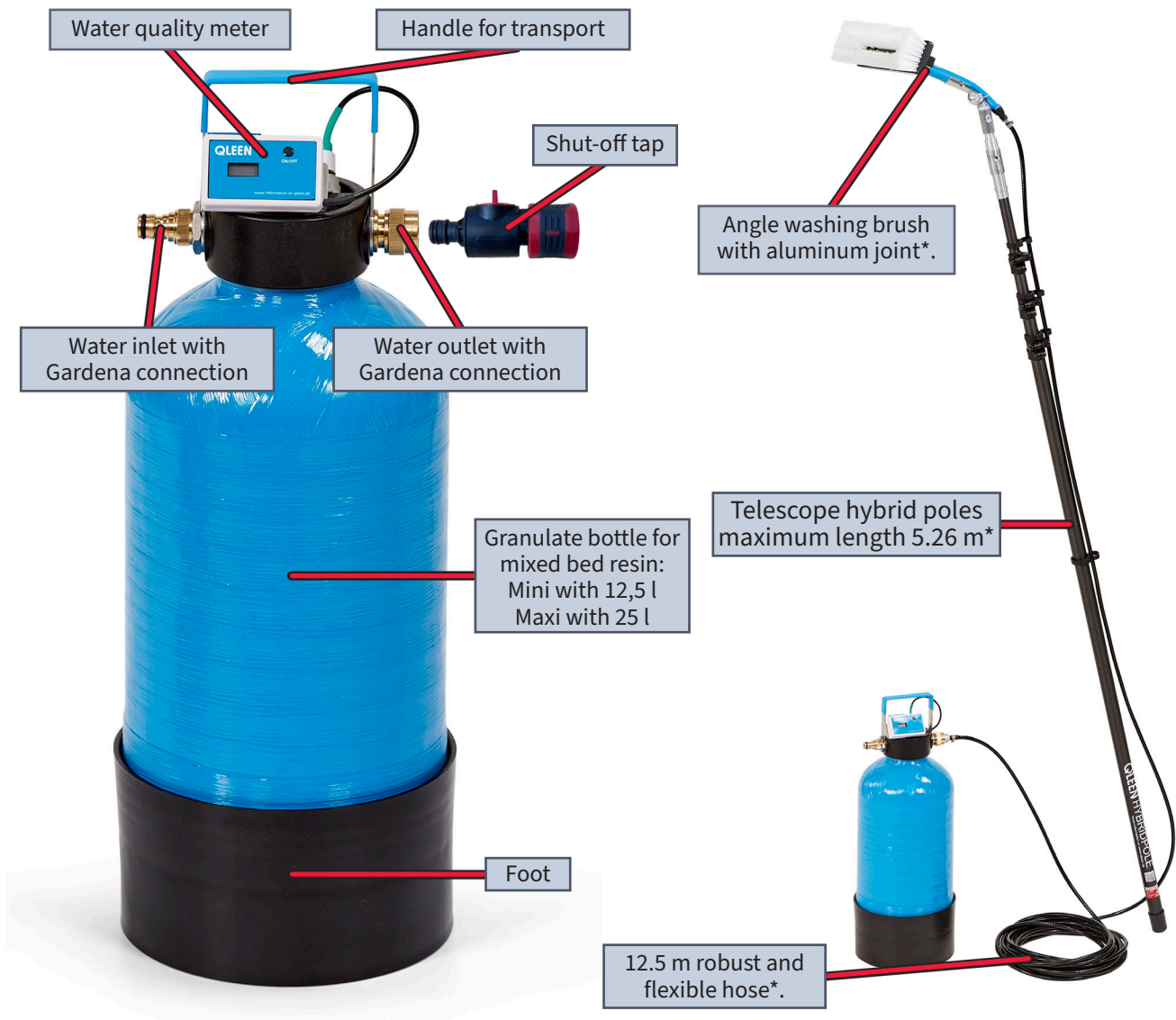
- Bottle head with carrying handle and integrated water quality meter
- 25 l granulate bottle with screw cap, filled with mixed bed resin
- Shut-off tap
- Instruction

QLEEN PURASTART Mini Komplettsset (70044)

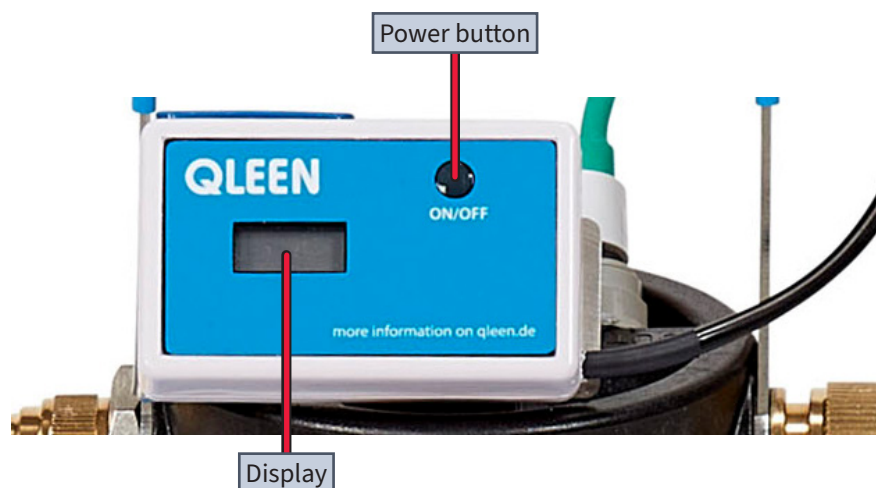
- Bottle head with carrying handle and integrated water quality meter
- 12.5 l granulate bottle with screw cap, filled with mixed bed resin
- Shut-off tap
- 5.25 m telescopic hybrid pole with clips for hose attachment
- 180° adjustable aluminum joint
- 27 cm angle washing brush with 2 integrated fan nozzles
- 12.5 m flexible hose with connectors
- Instruction

* Only in the variant QLEEN PURASTART Mini complete set (70044)

3.7 Connections and controls



3.8 Water quality meter



* Only in the variant QLEEN PURASTART Mini complete set (70044)

4 Starting up

4.1 Transport and parking

- The QLEEN PURASTART Mini/Maxi can be transported with the carrying handle.
- For longer distances, we recommend a hand truck for transportation



Caution Risk of injury

- Do not lift and carry the QLEEN PURASTART Mini/Maxi for long periods of time, this can lead to postural damage and overloading

- Only park the QLEEN PURASTART Mini/Maxi on a straight, level and non-slip surface.



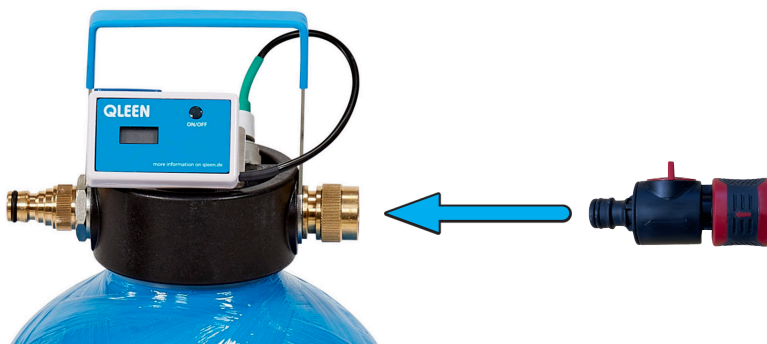
Caution Risk of injury

- Wear sturdy shoes with steel toecap when transporting, crushing of the foot can occur when setting down!
- Do not place on inclined, sloping and uneven surfaces, the granulate bottle can fall over and it can lead to injuries and damages!
- If there are obvious defects on the QLEEN PURASTART Mini/Maxi or the telescopic pole system, do not operate it!

4.2 Connection of the water supply

Water can be supplied directly to the house water connection via a Gardena hose.

- Connect the supplied stopcock to the outlet of the QLEEN PURASTART Mini/Maxi



- Set the shut-off tap to 'OFF'.



Attention the device can be damaged:

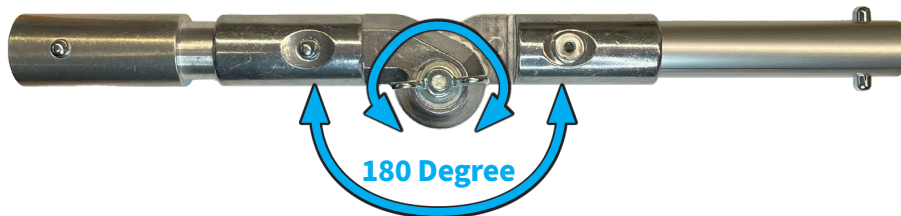
Only use clean tap water with a maximum inlet pressure of 5 bar for the water supply!
Otherwise, the unit or the mixed bed resin may be damaged.



- Connect the house water connection by means of the Gardena hose to the QLEEN PURASTART Mini/Maxi inlet.
 - Open the water tap of the house water connection.
- ⇒ The water supply is established

4.3 Connection of the telescopic pole and brush*

- Loosen the wing screw on the joint and set the desired working angle and tighten the wing screw again



- Attach the angle washing brush to the other end of the joint
- Put the joint on the telescopic hybrid pole



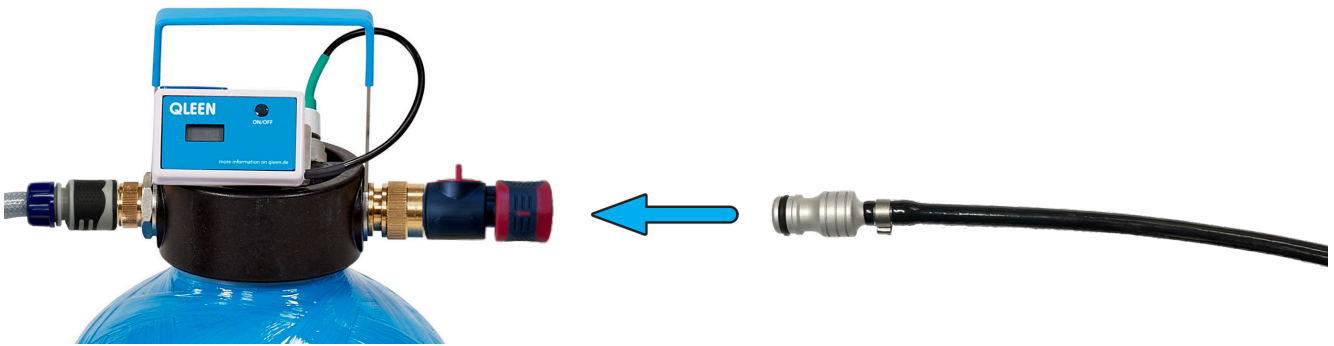
* Only in the variant QLEEN PURASTART Mini complete set (70044)

- To connect the LEWI telescopic pole to the joint, remove the QLEEN - LEWI adapter from the joint and insert the telescopic pole directly into the joint



- Connect the Gardena connection of the hose to the outlet of the shut-off tap
- Connect the barbed fitting on the other end of the hose to the nozzle inlets on the angle washing brush
- Attach the hose to the telescopic pole using the clips

⇒ The device is now ready for operation



5 Cleaning

For most soiling, the PUREWATER is completely sufficient.

Only heavily soiled and oily or greasy surfaces must be pre-treated with a cleaning solution.

Dirt that can only be removed by intensive mechanical cleaning (e.g. glass plane) should also be pre-treated accordingly.

The higher the level at which work is carried out, the greater the dirt load at the lower levels, because the "foreign dirt" from the higher level is added to the "inherent dirt".

This should be taken into account when calculating the work and the order.

5.1 Procedure

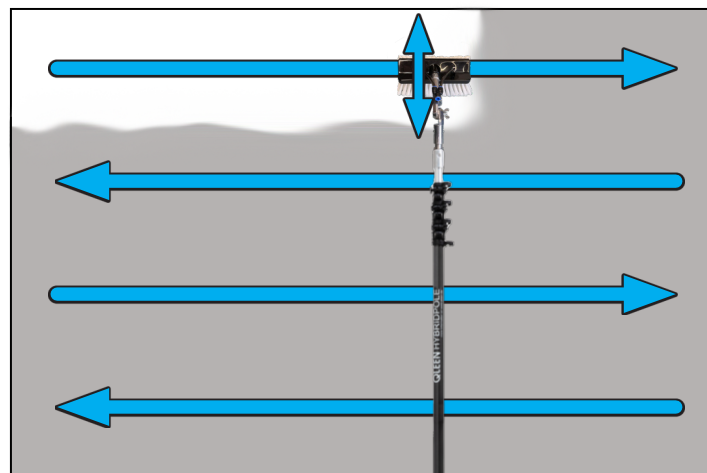
- Set the shut-off tap to 'ON' ⇒ after a short time, the PUREWATER flows through the nozzles on the brush



Caution Risk of injury

- **Risk of tripping:** Watch out for the hose when working!
- **Impact hazard:** Place the poles on the floor during work interruptions! Do not lean against vertical walls, this can cause the equipment to fall over and cause injury or damage to the equipment!
- **Electric shock hazard:** Do not work with the telescopic pole under high-voltage lines!

- Extend the telescopic pole to the maximum height of the cleaning surface.
- Position the brush in the upper area and move it from one side to the other with even upward and downward up and down movements over the surface to be cleaned.
- To increase the mechanical cleaning power, press the telescopic pole lightly against the surface to be cleaned with the help of the guide hand.
- Proceed in the same way for the surfaces below until the entire surface is cleaned.
- Adjust the telescopic pole according to the working height in order to ensure fatigue-free work.

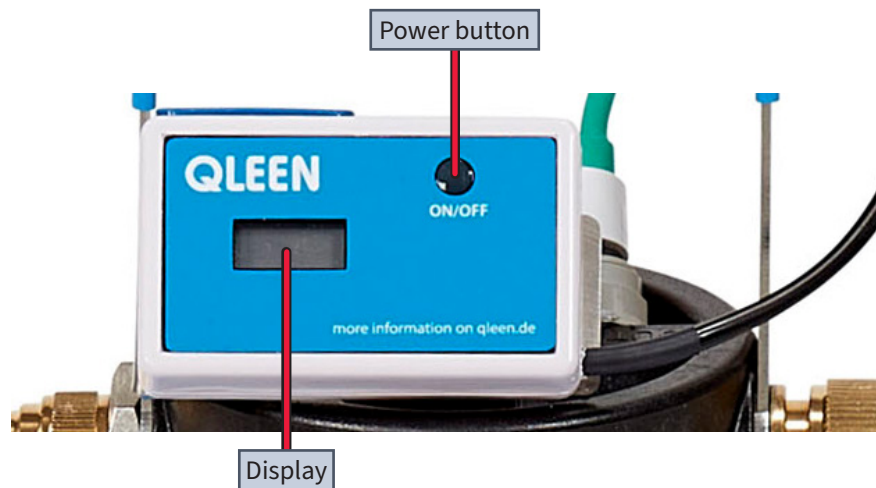


6 Water quality meter

With the integrated measuring device you can monitor the quality of the filtered water at any time. We recommend for glass and solar systems from a value of 50 μS to replace the mixed bed resin. If the values are above 50 μS it can not be guaranteed that the surface dries streak and stain free.

6.1. Operation

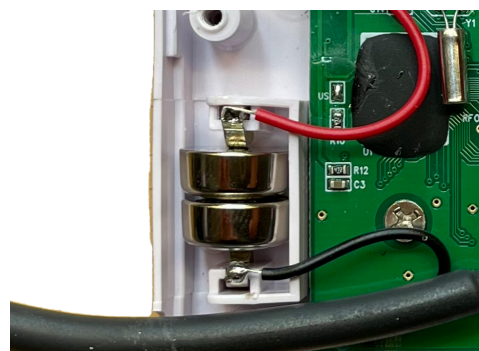
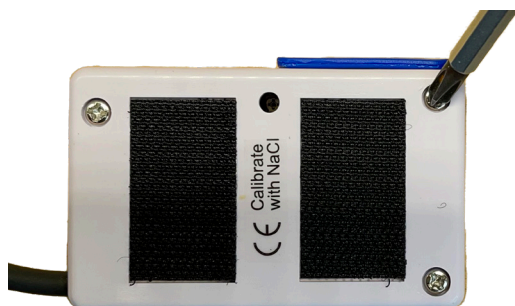
- Switch on the meter with the power button, after 10 minutes the meter switches off automatically
- The display shows the salinity of the output water in μS
- From values above 50 μS we recommend the exchange of the mixed bed resin



6.2. Replace batteries

If the display is barely legible or no longer legible, the batteries must be replaced. 2 button cells of type 357 (LR44, AG13) are installed.

- Detach the meter from the handle, it is attached to the handle with Velcro.
- Remove the 3 screws from the bottom of the housing using a Phillips screwdriver.
- Remove the old battery and replace it with a new one, paying attention to the polarity of the batteries.
- Screw the case back together and attach it to the handle.



7 After cleaning

7.1 Dismantling

- Place the telescopic pole on the ground
- Close the tap of the house water connection
- Wait until the water from the bottle runs out
- Close the shut-off tap



Caution pressure on the granulate bottle

- Wait until the water has completely drained from the granulate bottle, there may still be high pressure in the granulate bottle!

- Disconnect the flex hose from the granulate bottle and brush and roll it up.
- Remove the angle washing brush and the aluminum joint
- Retract the telescopic pole completely
- Disconnect the hose from the house water connection

8 Additional information

8.1 Troubleshooting

| Malfunctions | Causes | Solutions |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| No water comes out of the nozzles | <ul style="list-style-type: none"> The tap of the house water connection is closed The stopcock is closed The hose is kinked | <ul style="list-style-type: none"> Open the stopcock and water tap Remove the kink from the hose |
| The meter does not display anything | <ul style="list-style-type: none"> The batteries are empty | <ul style="list-style-type: none"> Replacing the batteries in the meter, see Page (6.2 Replacing batteries) |
| Little water and an uneven spray pattern from the nozzles | <ul style="list-style-type: none"> The nozzles are clogged with dirt or mixed bed resin residues | <ul style="list-style-type: none"> Remove the hose on the nozzles and blow through with compressed air from the nozzle side |

8.2 Maintenance and cleaning of the device and accessories

Clean hoses

- Carefully wash or wipe off any soiling
- Dry with a clean cloth
- Check for damage and leaks

⇒ **The hose is cleaned, checked and ready for storage and transport**

Clean telescopic pole

- Rinse the telescopic pole as well as all closures and contact surfaces with water.
- Clean the outside and inside with a soft, clean cloth
- If necessary, lubricate with commercially available silicone spray

⇒ **The telescopic pole is cleaned, checked and ready for storage and transport**

Clean washing brush

- Rinse brushes
- Allow to air dry

⇒ **The washing brush is cleaned, checked and ready for storage and transport**

8.3 Replacement of the mixed bed resin

If the water quality measuring device indicates more than 50 μS , we recommend changing the mixed bed resin.

For the exchange of the mixed bed resin, please observe the instructions of the "User information mixed bed resin systems" (separate publication of Lehmann KG).

8.4 Storage

The QLEEN PURASTART Mini/Maxi should be stored dry and at a temperature above 5 °C.

The mixed bed resin in the bottle can be stored for up to 6 months; longer storage will render it unusable due to algae and germ formation.

8.5 Repair and maintenance

System users and operators must not carry out any repair and maintenance work of their own on Lehmann cleaning systems.

Such work is not permitted and will result in direct loss of warranty and guarantee.

loss of warranty and guarantee.

Repair and maintenance work may only be carried out by the technical customer service of Lehmann authorized dealers or by the manufacturer, Lehmann KG.

For all repair and maintenance work, please contact your Lehmann authorized dealer from whom you purchased the cleaning system.

All repairs are carried out by trained technicians who are equipped with original spare parts for Lehmann systems.

Before contacting the authorized dealer's technical service department, please have the following information ready:

- Type, customer number, phone number, date of purchase and the most accurate description of the problem possible

8.6 Recycling and disposal

System, accessories and packaging - must not be disposed of with household waste.

Instead, they must be handed over to a suitable collection point for recycling or disposal.

Return shipment to Lehmann KG is also possible. The sender bears the costs of the return shipment.

Saturated mixed bed resin can be recycled or disposed of in household waste.

Please observe the instructions in the "**User Information Mixed Bed Resin Systems**" (separate publication of Lehmann KG).

8.7 Warranty and guarantee

Lehmann KG trusts in the quality of its products.

That is why we offer our customers in the member states of the European Union an exceptional 24-month warranty, which is understood to be without prejudice to statutory warranty claims and does not restrict them.

8.8 Manufacturer information

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9 Technische Informationen

9.1 Supply connections

- Water supply via Gardena tap piece (only tap water with maximum 5 bar)
- PUREWATER outlet via Gardena coupling

9.2 Climatic operating conditions

- Permissible temperature range for system use: +5 °C to +50°C
- Maximum permissible wind speed: < 3.4 m/s (wind force 2) for work with pole set
- Maximum permissible surface temperature of surfaces to be cleaned: < 50 °C

9.3 Technical data

| Component | Measured variables | Notes | Values |
|----------------------|------------------------------------------|--------------------------------|--------------------------|
| QLEEN PURASTART Mini | Dimensions | Length / Width / Height | 21 x 21 x 55 cm |
| | Weight | With mixed bed resin | 15 KG |
| | Required filling quantity | | 12,5 l |
| | Productivity | Depending on the water quality | 500 - 5100 l PUREWATER |
| QLEEN PURASTART Maxi | Dimensions | Length / Width / Height | 21 x 21 x 94 cm |
| | Weight | With mixed bed resin | 23 KG |
| | Required filling quantity | | 25 l |
| | Productivity | Depending on the water quality | 1000 - 10200 l PUREWATER |
| EC meter | Measuring range | | 0-9999 µS ±2 % |
| | Batteries | | 2 x button cell 357-A |
| Telescopic pole | Working height | Maximum | 7 m |
| Workplace | Work and movement area | Minimum length / width | 2 x 2 m |
| | Ground inertia | At least | 250 Kg/m ² |
| | Safety distance to power poles and lines | At least | 40 m |

9.4 CE Declaration of Conformity

This product has been extensively tested prior to market launch and complies with the legal requirements. Please see next page: **CE Declaration of Conformity**.



EC declaration of conformity



Directive 97/23/E (pressure equipment)

The documents authorized person is:

Mr. Dustin Schnabel, Lehmann KG, Kranichstraße 2a, D 17235 Neustrelitz, Germany

Manufacturer:

Lehmann KG, Kranichstraße 2a, D 17235 Neustrelitz, Germany

hereby declares that the following products / devices match the regulations of the above mentioned directives including their amendments in force at the time of declaration.

- **QLEEN / LEWI PURASTART in different versions**

The following harmonized standards have been applied:

EN 13923

Neustrelitz, 01.12.2016



H.J. Supthut
Executive Director

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