

# QLEEN

PURE WATER CLEANING SYSTEMS

## User information



**PURASTART E**

**72101**

**Version 02/2023**

## Introduction to the user information QLEEN PURASTART E

Thank you for choosing a QLEEN PURASTART E cleaning system from Lehmann. Before you start with 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 E cleaning system, please also make absolutely sure that your employees have also read the „PURASTART E User Information“ and follow the safety and warning instructions. Please also observe and comply with the „General User and Safety Instructions“ (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.

### Manufacturer / Publisher

Address      **Karlhans Lehmann KG**  
                 **Kranichstrasse 2a**  
                 **D-17235 Neustrelitz**

Phone        **(+49) 3981 48 850**  
Fax            **(+49) 3981 44 06 20**  
E-Mail        **[info@qleen.de](mailto:info@qleen.de)**  
Internet      **[www.qleen.de](http://www.qleen.de)**  
Youtube      **[www.youtube.com/@qleen](http://www.youtube.com/@qleen)**  
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### Country of origin

Federal Republic of Germany

**We are pleased that you have chosen our QLEEN PURASTART E product.**

**Item number**                **72101**

**Type designation**        **QLEEN PURASTART E**

**Serial number**            \_\_\_\_\_

**Year of manufacture**    \_\_\_\_\_



\* Picture shows QLEEN PURASTART E (72101) with 9m telescopic CARBONPOLE (70518), brush bow Vario (71037) and window brush 40 cm (71001)

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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 E machine.

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, for further safety instructions and handling of mixed bed resin read the "**User Information Mixed Bed Resin Systems**".
- Do not work with the pole system under high voltage line  
**! DANGER OF ELECTRIC SHOCK !**



#### Warning: Risk of accidents and damage to the machine and equipment

- Use the machine only from +5 °C and higher, frost damage to the machine and equipment may occur.
- Do not work with the pole system in wind forces above 2 (>3.3 m/s), the pole system may buckle and fall off



#### Warning: Electric shock and fire hazard

- Before each starting up, check the power cable and the power plug for damage. If any damage is detected, the machine must be shut down immediately and checked by a specialist!
- When plugging in the charger, make sure that the power plug and your hands are not wet!
- Do not throw the battery into open fire!
- If the battery generates an unusually high level of heat or smoke during operation or charging or smoke, switch off the battery immediately and disconnect the charger from the mains and the battery and have the machine checked immediately by a specialist!

## 3 Description of the QLEEN PURASTART E

### 3.1 The PUREWATER 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-pressurization in the granulate bottle and reaches the cleaning head as PUREWATER.

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

This means that in many cases the use of cleaning solutions can be dispensed with. (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 how productive the granulate bottle is.

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

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

\* Based on a flow rate of 120 l/h with the 10 mm hose and the brush bow aluminum joint.

### 3.4 How the QLEEN PURASTART E works

After switching on, the power button lights up green and the system is ready for operation.

The operating mode is selected via the remote control.  
PUREWATER, direction change ROTAQLEEN.

Tap water is required for cleaning with PUREWATER.  
For this purpose, tap water is passed through the mixed bed resin system in the granulate bottle and demineralized in the process.

A pump transports the clean water via a hose attached to the telescopic pole\* to the cleaning head\* at the upper end of the pole set\*. There it is distributed evenly and sparingly over the surfaces to be cleaned via fine nozzles\*.

The telescopic CARBONPOLE\* is made of a stable and light carbon material.  
When retracted, it has a length of 2.04 m and can be extended to a length of 9.00 m. This results in variable working lengths.  
This results in variable working lengths between 3 m (minimum) and approximately 10 m (maximum).

The hose is 25 m long and made of a robust material.

The integrated water quality measuring device informs about the quality of the outgoing PUREWATER.

### 3.5 Areas of application

Typical applications for the QLEEN PURASTART E are:

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

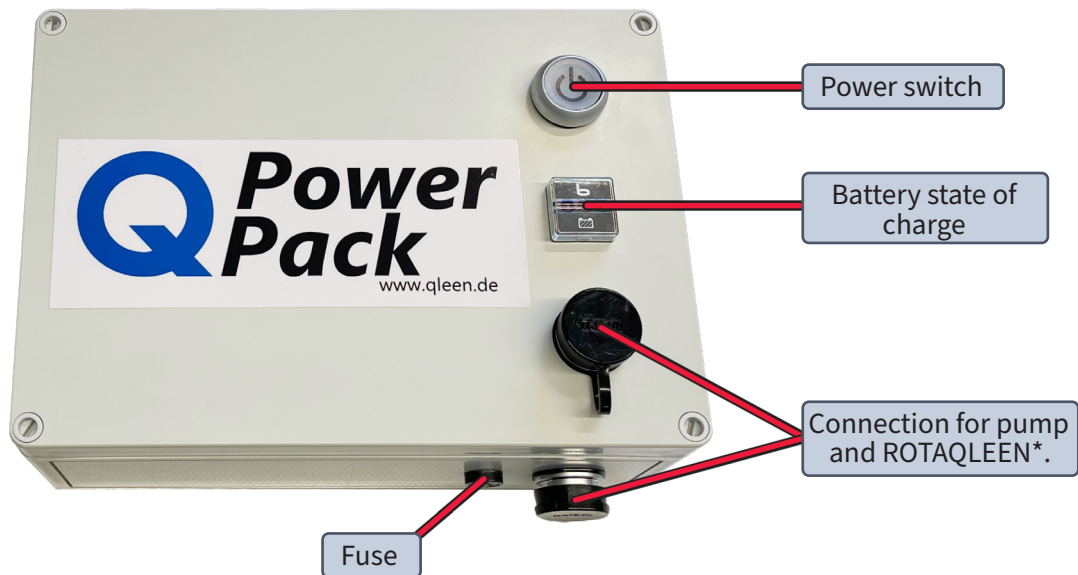
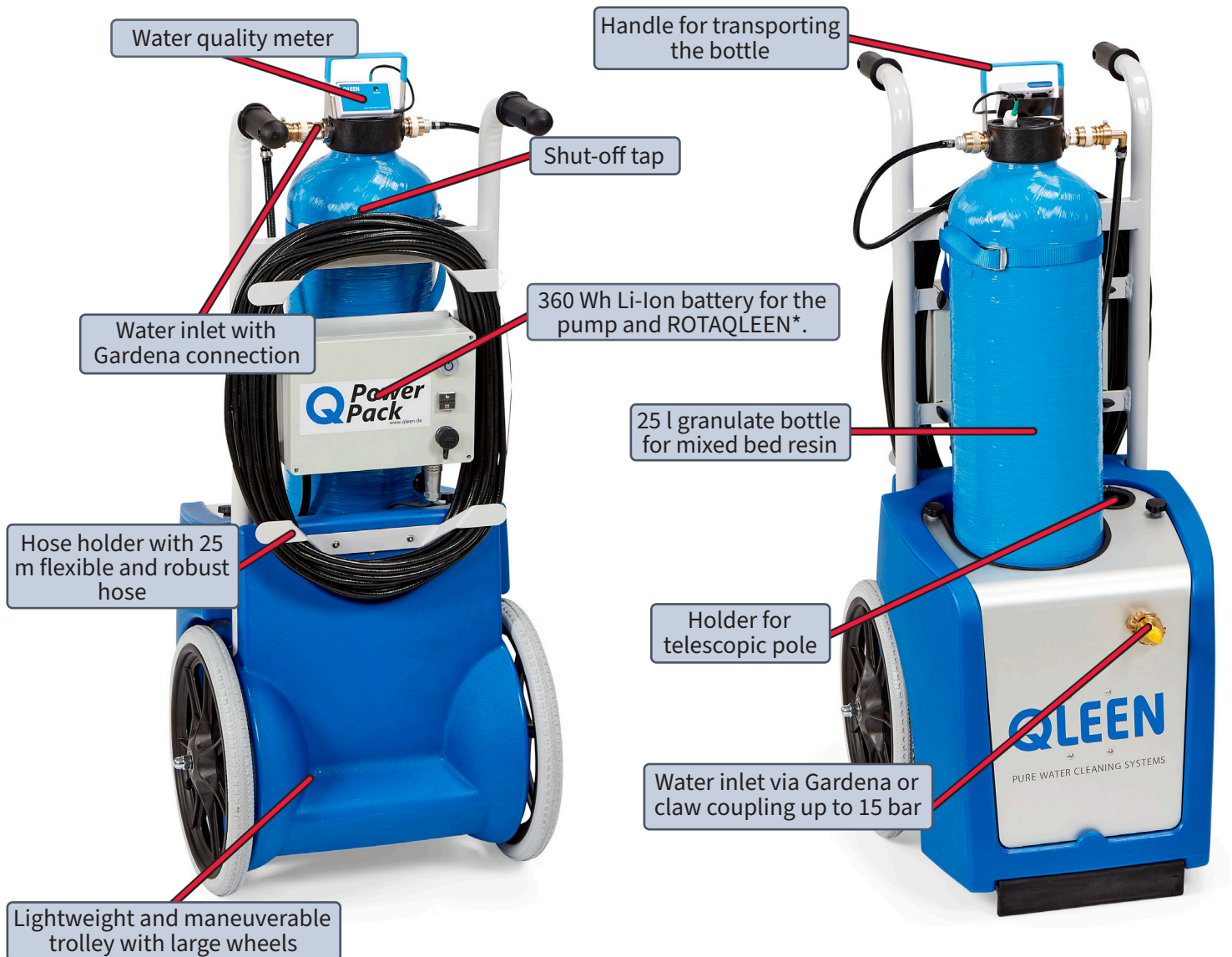
### 3.6 Scope of delivery

#### QLEEN PURASTART E (72101)

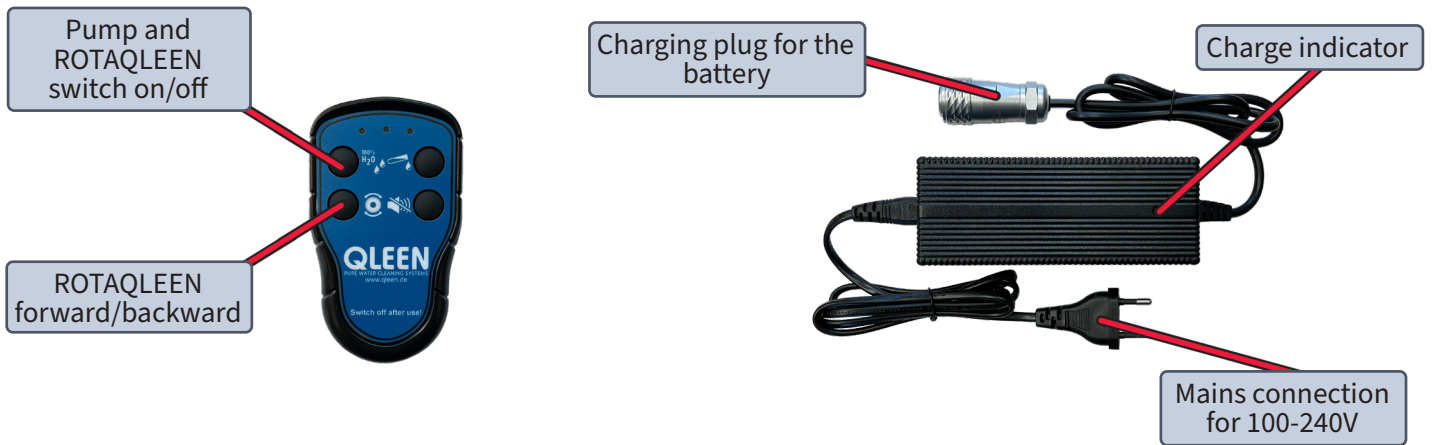
- QLEEN PURASTART E base station with 25 l granulate bottle filled with mixed bed resin, compact pump for sucking in water, integrated measuring device for water quality and 25 m hose coiled on hose holder
- 360 Wh Li-Ion battery to power the pump and an optional ROTAQLEEN
- Remote control for on/off and forward/reverse
- Charger
- Suction hose
- Instruction



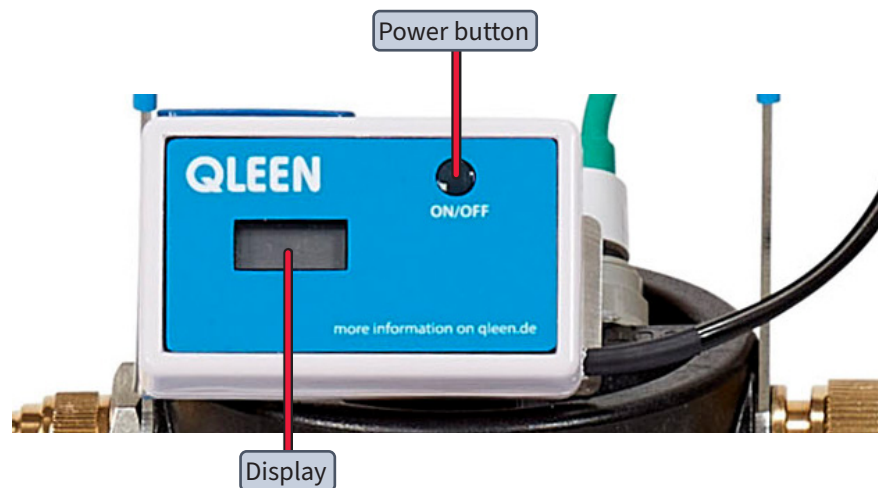
### 3.7 Connections and controls



\* Accessories not included



### 3.8 Water quality meter



## 4 Starting up

### 4.1 Transport and parking

- The QLEEN PURASTART E can be transported by trolley
- Only park the QLEEN PURASTART E on a straight, level and non-slip surface.



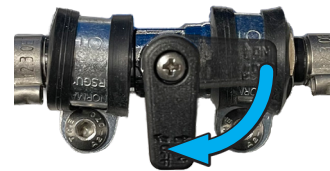
#### Caution Risk of injury

- Wear sturdy shoes with steel toe caps when transporting the unit, as this can cause bruising to the foot when the unit is set down!
- Do not place on inclined, sloping and uneven surfaces, the QLEEN PURASTART E may fall over and this may result in injury and damage!
- If there are obvious defects on the QLEEN PURASTART E, the battery or the telescopic pole system, do not put it into operation!

## 4.2 Connection of the water supply

Water can be supplied directly to the house water connection via a Gardena hose or through a tank with the suction hose.

- Before connecting the tap water, make sure that the shut-off tap is closed.



### Caution the device may be damaged:

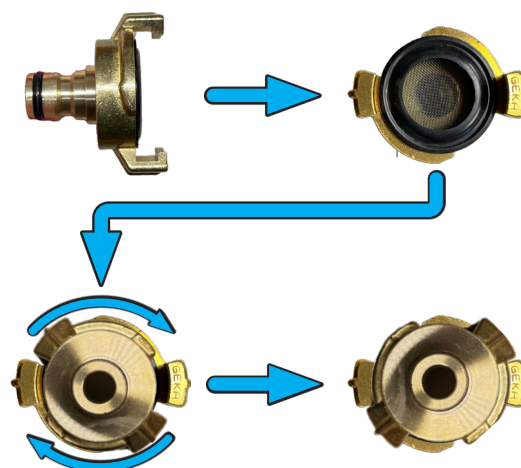
Only use clean tap water with a maximum inlet pressure of 15 bar for the water supply! It can otherwise lead to damage to the device.



Before assembly, check the strainer and the seals in the quick coupling for contamination. These can reduce the flow rate and lead to a drop in pressure at the nozzles, see Page 21 (8.4 Cleaning/replacing the strainer at the water inlet)

## 4.3 Water supply through the house water connection

1. Attach the Gardena adapter to the water inlet and lock it in place by turning it clockwise.



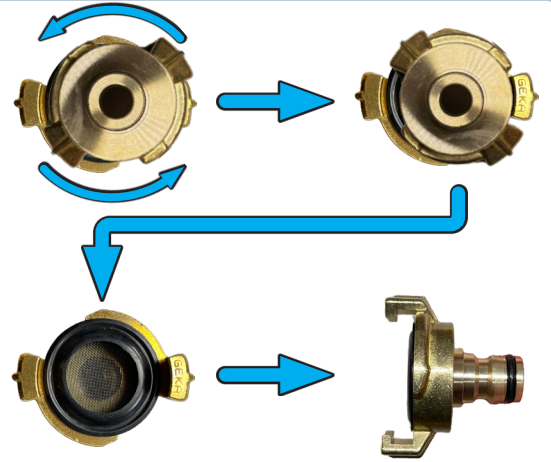
2. Connect the house water connection by means of Gardena hose to the input of the QLEEN PURASTART E
3. Open the tap of the house water connection

⇒ The water supply via the house water connection is established

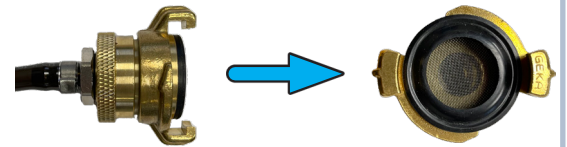


## 4.4 Water supply through a water tank

1. Remove the Gardena adapter from the water inlet by turning it counterclockwise.



2. Attach the suction hose to the machine with the quick coupling and screw it tight



3. Sink the side with the filter in the tank to the bottom  
⇒ **The water supply via the water tank is established**



## 4.5 Switching on the remote control and the battery

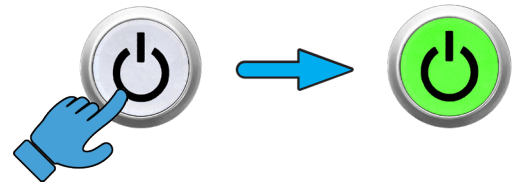
The machine is controlled with the remote control.  
The speaker key is without function.

1. To switch on the remote control, set the power switch to »I«.



2. Switch on the battery with the »Power« key, the key lights up **green**

⇒ The machine is switched on



- If the battery indicator shows **yellow** the battery should be charged

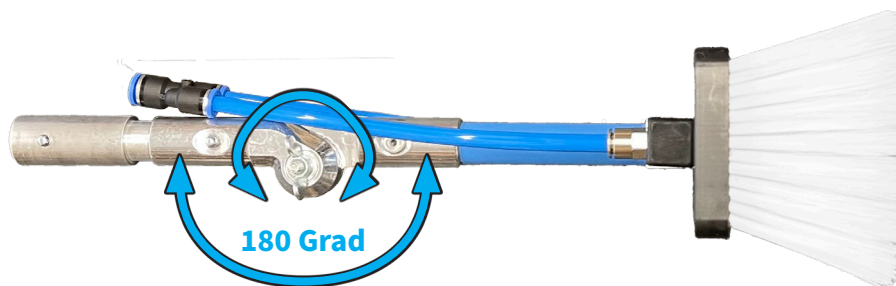
- If the battery indicator shows **red**, the battery must be charged immediately

⇒ See page 19 (8.2 Charging the battery)

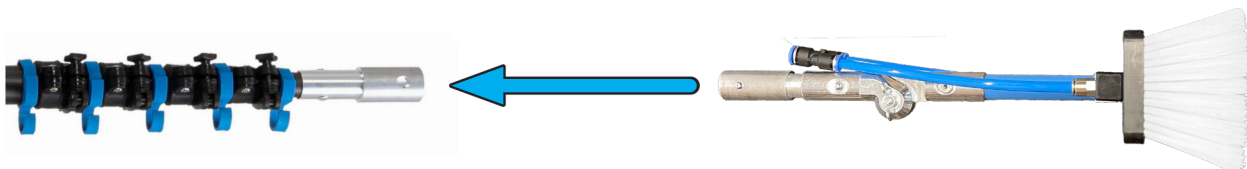


## 4.6 Connection of the telescopic pole and brush\*

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



2. Put the joint with the window washing brush on the telescopic CARBONPOLE



3. To connect the LEWI telescopic rods to the joint, remove the QLEEN - LEWI adapter from the joint and insert the telescopic rod directly into the joint





4. Unwind the hose from the hose holders to the required length
5. Attach the hose to the telescopic pole using the clips
6. Connect the plug nipple at the other end of the hose to the nozzle inlets on the angle washing brush

⇒ The device is now ready for operation



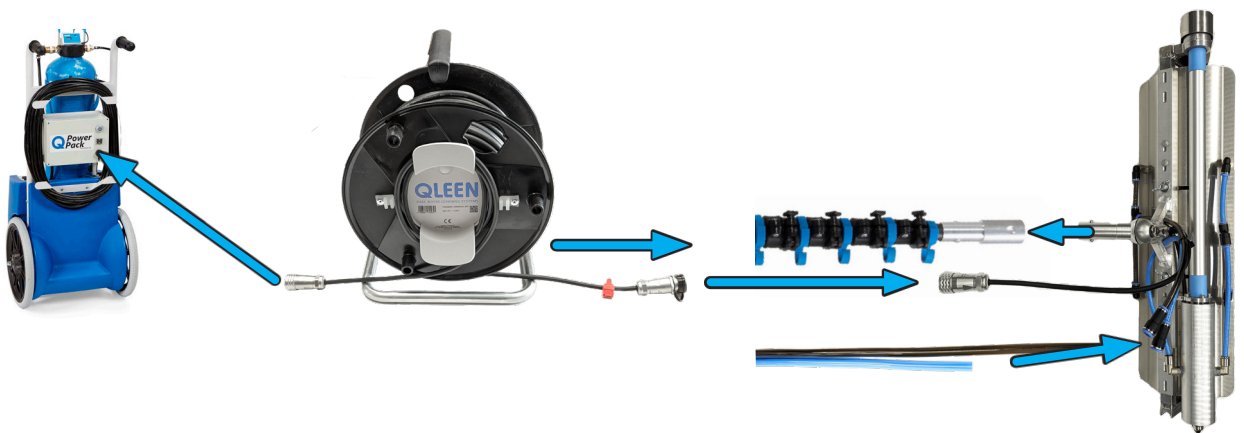
## 4.7 Connecting a ROTAQLEEN\*

The ROTAQLEEN are electric rotating brushes for use with heavy soiling and/or large areas. The QLEEN PROF I is equipped with a connection and control for supply and return for all current ROTAQLEEN

For further information read the „User information ROTAQLEEN“.

1. Insert the ROTAQLEEN into the brush adapter until the snap button clicks into place.
2. Roll out the cable to the required length
3. Connect the socket of the cable drum with the plug of the ROTAQLEEN
4. Connect the plug of the cable drum to the ROTAQLEEN socket on the machine.
5. Connect the hose to the nozzles on the ROTAQLEEN.
6. Attach the hose and cable to the telescopic rod with the clips

⇒ The ROTAQLEEN is ready for operation



### Beware of damage to the ROTAQLEEN:

- Always connect the blue input to the ROTAQLEEN and run water through it during operation, this serves to cool the motor.
- Do not use a cleaning solution with the ROTAQLEEN

## 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".

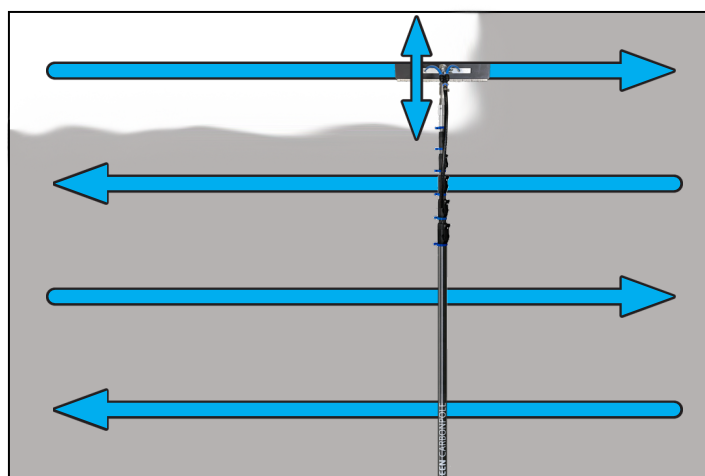
This should be taken into account when calculating the work and the order.



### Caution Risk of injury

- **Tripping hazard:** Pay attention to the hose when working!
- **Crash hazard:** Place the poles on the floor during work interruptions! Do not lean against vertical walls, this may cause them to fall over and result in injury or damage to the equipment!
- **Crash hazard:** Do not work with the pole system above wind force 2 (>3,3 m/s)
- **Risk of electric shock:** Do not work with the pole system under high-voltage lines!

1. Set the shut-off tap to the "ON" position
2. Extend the telescopic rod to the maximum height of the cleaning surface
3. Place the brush in the upper area and activate the machine with the remote control
4. Move from one side to the other with even up and down movements over the surface to be cleaned
5. To increase the mechanical cleaning power, press the telescopic rod lightly against the surface to be cleaned with the help of the guide hand
6. Proceed in the same way for the underlying surfaces until the entire surface is cleaned.
7. Adjust the telescopic rod according to the working height to ensure fatigue-free work



## 5.1 Cleaning with PUREWATER

Cleaning with PUREWATER is the most chemical-free and sustainable way of cleaning. Surfaces dry streak-free and without wiping due to the good salt absorption capacity of the PUREWATER.

The cleaning mode is activated with the remote control.

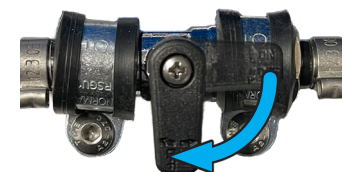
### Switching on the PUREWATER

1. Set the shut-off tap to the »ON« position
  2. Briefly press the »PUREWATER« button on the remote control
- ⇒ After a short time, the PUREWATER comes out of the nozzles via the blue hose and the ROTAQLEEN starts up



### Switching off the PUREWATER

2. Briefly press the »PUREWATER« button on the remote control
2. Set the shut-off tap to »OFF«
- ⇒ Stop the PUREWATER and the ROTAQLEEN



## 5.2 Cleaning with ROTAQLEEN

### Switching on the ROTAQLEEN

- Press the »PURWATER« key briefly
- ⇒ The ROTAQLEEN starts in the last selected running direction





**Switching the running direction**

- The ROTAQLEEN runs forward
- Briefly press the »ROTAQLEEN« button on the remote control

⇒ The ROTAQLEEN changes to reverse mode



- The ROTAQLEEN runs backwards
- Briefly press the »ROTAQLEEN« button on the remote control

⇒ The ROTAQLEEN changes to forward running mode

**Switching off the ROTAQLEEN**

- Press the »PURWATER« key briefly

⇒ The ROTAQLEEN stops

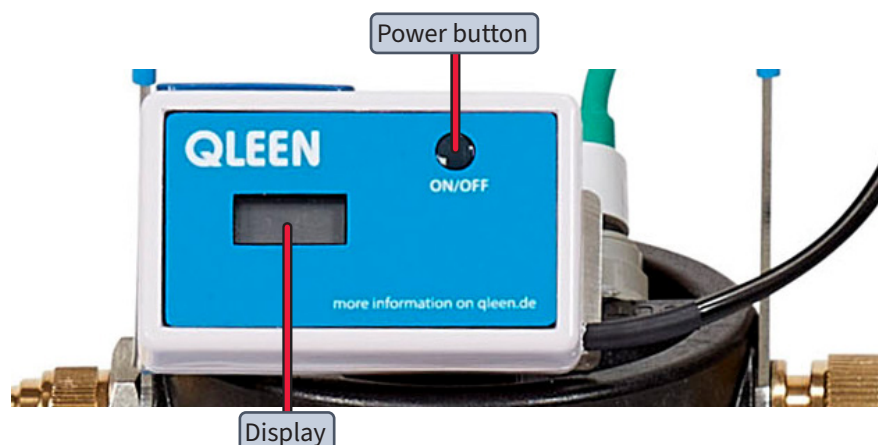


## 6 Water quality meter

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  $\mu\text{S}$  to replace the mixed bed resin. If the values are above 50  $\mu\text{S}$  it can not be guaranteed that the surface dries streak and stain free.

### 6.1. Operation

- Switch on the measuring device with the power button, after 10 minutes the device switches off automatically
- The display shows the salt concentration of the output water in  $\mu\text{S}$
- From values above 50  $\mu\text{S}$  we recommend replacing the mixed bed resin



## 7 After cleaning

### 7.1 Dismantling

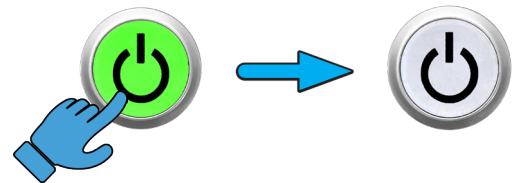
1. Switch off the machine with the »PUREWATER« button on the remote control
2. Place the telescopic rod on the floor



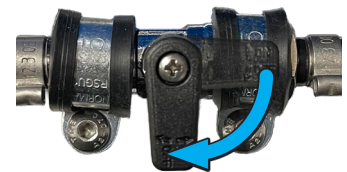
3. Switch off the remote control with the power switch set to »0«



4. Switch off the battery with the »Power« key



5. Close the tap of the house water connection
6. Wait until the water from the bottle has run out
7. Set the shut-off tap to »OFF«



**⚠ 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!

8. Retract the telescopic rod completely
9. Disconnect the hose from the brush, remove it from the telescopic rod and roll it up
10. Press the snap button on both sides and remove the aluminum joint with the brush
11. Disconnect the suction hose or water hose from the machine and from the house water connection

⇒ **The machine is transport ready**

## 8 Additional information

### 8.1 Maintenance and cleaning of the device and accessories

#### Clean hose

- Carefully wash or wipe off any soiling
- Dry with a clean cloth
- Check for damage and leaks
- Roll up the hose onto the hose holders

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

#### Clean telescopic rod

- 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
- Let dry in the air

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

### 8.2 Charging the battery

When the battery is empty, one charging cycle takes about 5 hours.

The battery can be switched on or off for charging. Intermediate charging is also possible.

The batteries are Li-Ion batteries. They should be fully charged regularly.



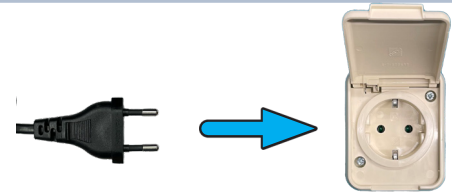
#### **Warning: Electric shock and fire hazard**

- Before each starting up, check the power cable and the power plug for damage. If any damage is detected, the machine must be shut down immediately and checked by a specialist!
- When plugging in the charger, make sure that the power plug and your hands are not wet!
- If the battery generates an unusually high heat or smoke during charging, switch off the battery immediately and disconnect the charger from the mains and the battery and have the machine checked immediately by a specialist!

- If the battery indicator shows **yellow** the battery should be charged
- If the battery indicator shows **red**, the battery must be charged immediately



1. Insert the mains plug of the charger into the wall socket



2. Connect the charger plug to the battery, making sure that the red dots on the plug and socket match.

⇒ The status indicator on the charger changes from **green** to **red**



**i** If the status indicator on the charger is continuously **green**, the plug is not properly connected to the battery.

3. The status indicator lights up **red** during charging
4. After the charging process is completed, the status indicator lights up **green**

⇒ The charging process is completed



## 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 Clean/replace strainer at water inlet

If the water flow is poor in suction operation, the strainer at the water inlet may be clogged and must be cleaned or replaced.

1. Remove the rubber seal in the claw coupling



2. Remove the sieve with a small screwdriver



3. If the sieve has holes it must be replaced
4. If dirty, clean the sieve thoroughly under running water
5. Press the cleaned or new sieve and the seal back into the claw coupling

## 8.5 Battery change remote control

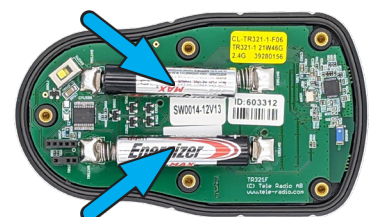
If the remote control does not respond after switching on or the range is reduced, the batteries must be replaced.

There are 2 round cells of the type AAA (LR3) installed..

1. Remove the 5 screws on the bottom of the housing with a Phillips screwdriver and remove the cover



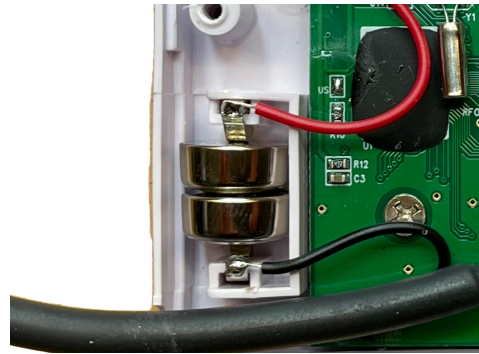
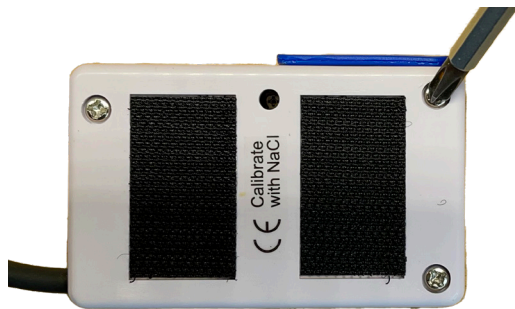
2. Remove the old AAA batteries and replace them with new ones, being sure to observe the polarity of the batteries.
3. Close and screw the housing again



## 8.6 Battery change meter

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.

1. Detach the meter from the handle, it is attached to the handle with Velcro tape
2. Remove the 3 screws on the underside of the housing using a Phillips screwdriver
3. Remove the old battery and replace it with a new one, paying attention to the polarity of the batteries.
4. Screw the housing back together and fasten it to the handle



## 8.7 Storage

The QLEEN PURASTART E 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.

## 8.8 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, telephone number, date of purchase and the most accurate description of the problem possible

## 8.9 Troubleshooting

Interference	Causes	Solutions
No water comes out of the nozzles	<p>The tap of the house water connection is closed</p> <p>The stopcock is closed</p> <p>The hose is kinked</p>	<p>Open the stopcock and water tap</p> <p>Remove the kink from the hose</p>
The meter does not display anything	The batteries are empty	Replace batteries in the meter, see <b>Page 22 (8.6 Changing the battery of the meter)</b>
Little water and an uneven spray pattern from the nozzles	<p>The strainer in the claw coupling water inlet is dirty</p> <p>The nozzles are clogged with dirt or mixed bed resin residues</p> <p>The claw coupling is not properly screwed to the water inlet</p>	<p>Take out the sieve and clean it, see <b>Page 21 (8.4 Cleaning/replacing the strainer at the water inlet)</b></p> <p>Remove the hose on the nozzles and blow through with compressed air from the nozzle side</p> <p>Tighten the claw coupling</p>
The surface does not dry streak free	The granules have a conductance of over 50 $\mu\text{S}$	The mixed bed resin must be replaced, see <b>Page 20 (8.3 Replacing the mixed bed resin)</b>
The remote control does not respond	<p>Remote control not switched on</p> <p>Batteries in remote control empty</p>	<p>Switch on the remote control, see <b>Page 13 (4.7 Switching on the remote control and battery)</b></p> <p>Replace the batteries, see <b>Page 21 (8.5 Changing the battery of the remote control)</b></p>
Poor remote control range	<p>Batteries in the remote control are empty</p> <p>Buildings or other interfering transmitters are nearby</p>	<p>Replace the batteries, see <b>Page 21 (8.5 Changing the battery of the remote control)</b></p> <p>If possible, always place the machine in the line of sight, reduce the distance to the machine or eliminate the sources of interference.</p>



## 8.10 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).

## 8.11 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.

## 8.12 Manufacturer information

Karlhans Lehmann KG  
Kranichstrasse 2a  
D - 17235 Neustrelitz

Phone +49 (0) 3981 4885 0

Fax +49 (0) 3981 4406 20

E-Mail [info@qleen.de](mailto:info@qleen.de)

Homepage [www.qleen.de](http://www.qleen.de)

Youtube [www.youtube.com/@qleen](http://www.youtube.com/@qleen)

Facebook [www.facebook.com/lehmannkg/](http://www.facebook.com/lehmannkg/)



## 9 Technical information

### 9.1 Supply connections

- Water supply via Gardena tap piece (only tap water with max. 15 bar) or suction via claw coupling with suction hose
- PUREWATER output via 25 m hose

### 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 E	Dimensions	Length / Width / Height	38 x 38 x 110 cm
	Weight	With mixed bed resin	50 KG
	Required filling quantity		25 l
	Productivity	Depending on the water quality	1000 - 10200 l PUREWATER
	Battery		Li Ion battery 25.4 V, 15 Ah
	Pump		24 V, 6 bar, up to 360 l/h
Charger	Power supply	Type F connector	100-240 V, max 1,2 A
	Output	Special charging curve for Li-Ion batteries	29 V, 3 A
Remote control	Range	Without obstacles, on line of sight	up to 50 m
	Frequency band		2405-2480 MHz
	Approval for		EU, USA, Canada
	Batteries		2 x AAA (LR3)
EC meter	Measuring range		0-9999 µS ±2 %
	Batteries		2 x button cell 357-A
Telescopic pole	Working height	Maximum	10 m
Workplace	Work and movement area	Minimum length / width	2 x 2 m
	Ground inertia	At least	250 Kg/m <sup>2</sup>
	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 launch and complies with regulatory requirements.



**Karlhans Lehmann KG, Kranichstrasse 2a, DE -17235 Neustrelitz**

Homepage: [www.qleen.de](http://www.qleen.de)  
Phone: **+49 (0)3981 48850**  
E-Mail: [info@qleen.de](mailto:info@qleen.de)