

Service manual

For the installer for installation and commissioning

Water softener

LEYCOsoft Pro 9 (1417)

LEYCOsoft Pro 15 (1418)



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About this service manual

This service manual facilitates proper installation, commissioning and maintenance of the water softener.

The service manual is a constituent part of the water softener and must be retained by the operator of the device.

Qualified installers must carefully read through all the information in this service manual, and confirm that they understand it, before commencing any work. Compliance with all the safety notices and instructions in this service manual is an essential requirement for safe working. The local provisions on occupational safety, environmental protection regulations and general safety regulations for the area of application of the water softener also apply.

The figures in this manual are intended to aid understanding and may differ from the actual design.

Target group for this service manual

The qualified installer is trained specially in gas and water installations and is familiar with the relevant standards and regulations.

The qualified installer can carry out work on gas and water systems based on their professional training and experience and can independently recognise and avoid possible dangers.

Area of responsibility of the qualified installer:

- Safe setup of the water softener at the installation location
- Correct connection of the water pipes
- Water pipe pressure testing
- Transfer of the service manual to the operator for storage
- Initial commissioning of the water softener
- Annual maintenance of the water softener

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DVGW standards

The water softener is certified according to DVGW standards (German Technical and Scientific Association for Gas and Water). To maintain this certification, certain water softener settings must not be changed.

Intended use

LEYCOsoft Pro softening systems are intended for softening drinking water in domestic applications and are primarily intended to protect downstream installations and consumers from the effects of limescale.

Individual sizing dependent on the local water hardness, property-related water consumption and volume flow is essential.

Extract from DIN 1988-200 12.6.2 Table 7:

Application	Maximum exchange capacity in mol
One and two-family residences (up to 5 people)	1.6
Three to five-family residences (up to 12 people)	2.4
Six to eight-family residences (up to 20 people)	3.6

Water softener exchange capacity

Exchange capacity refers to the volume of softened water that the system provides until recharge is required again.

Approved salt

- Marked according to DIN EN 973 Type A
- Approved according to the Biocide Ordinance

Control settings

2nd Backwash (Clean / On)	ON
Duration of the 2nd backwash	3 minutes
Maximum recharge interval	4 days
Recharge after 97 %	ON
Backwash duration	3 minutes
Fast rinse duration	LEYCOsoft Pro 9: 1 min. LEYCOsoft Pro 15: 4 min.
Additional components	Chlorine disinfection unit

Sodium limit

- To reduce the water hardness by 1 °dH, add 8 mg/l sodium.
- The limit is 200 mg/l.

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1 Overview and scope of delivery

- A Control panel and display
- B Salt reservoir lid
- C Salt reservoir
- D Injector
- E Valve assembly
- F Chlorine disinfection unit bracket
- G Upper filter nozzle
- H Resin tank
- I Lower filter nozzle
- J Resin bed
- K Chlorine disinfection unit
- L Brine valve assembly

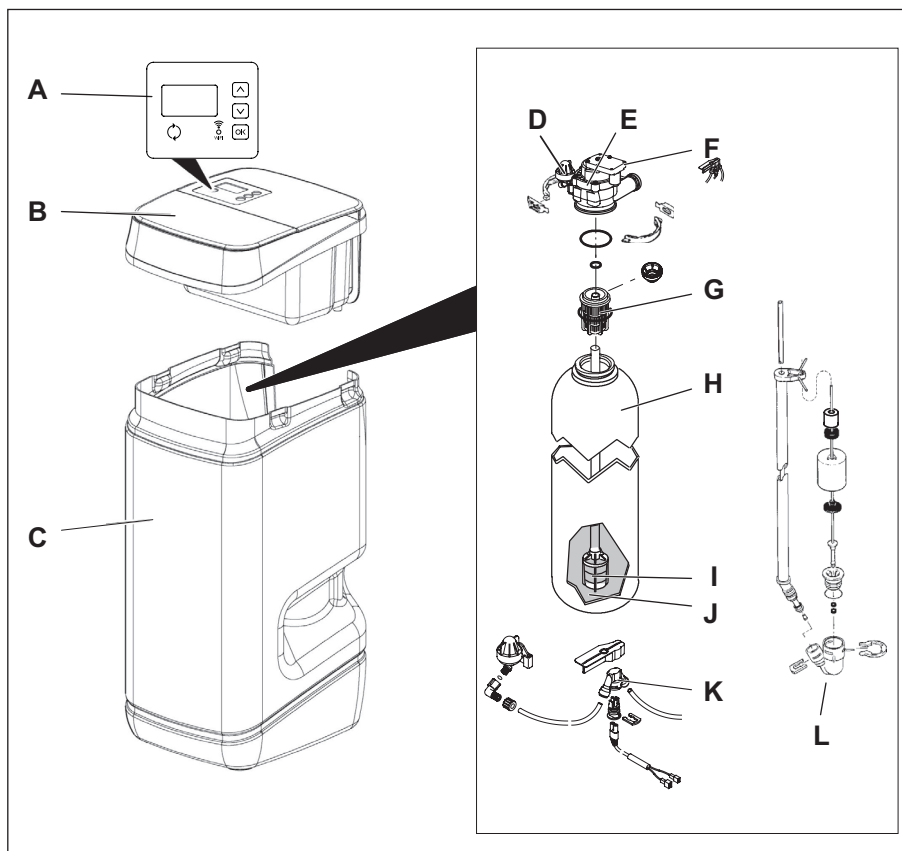


Fig. 1: Components of the water softener

Scope of delivery

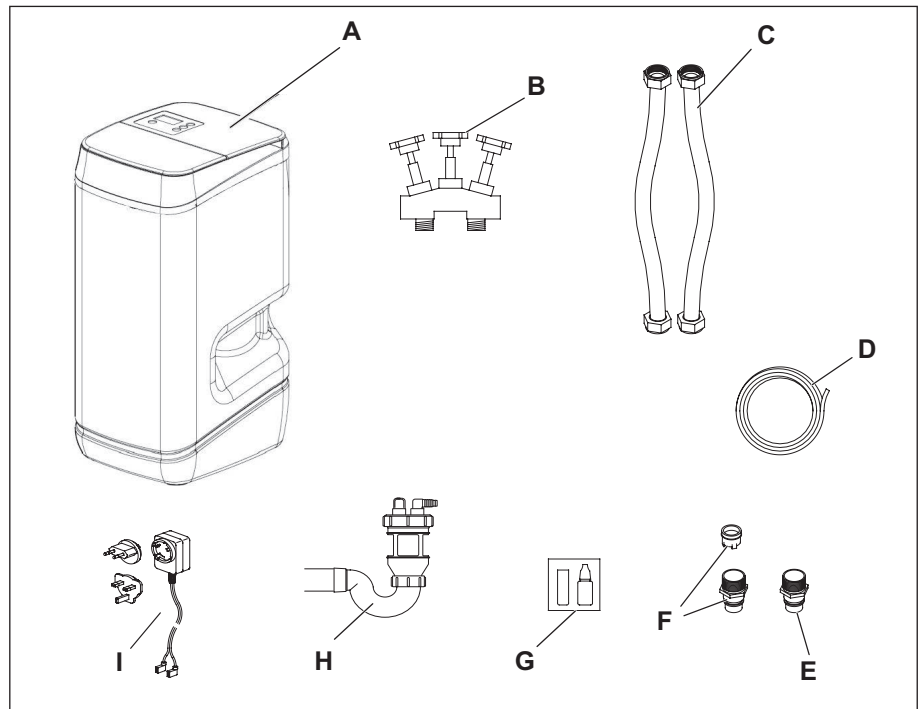


Fig. 2: Scope of delivery

Upon receipt, the entire delivery (scope of delivery) must be checked for transport damage and completeness.

The scope of delivery contains the following components:

Item no.	Number	Article
A	1	Water softener
B	1	Bypass mixing valve, 1"
C	2	Flexible armored hose, 1 m incl. 2 x flat seal
D	1	Drain hose
E	1	Connection adapter (output), including O-ring
F	1	Connection adapter (input) with non-return valve (input), including O-ring
G	1	Hardness measuring kit
H	1	Wastewater connection adapter, including 2 hose clips
I	1	Mains plug
-	1	Parts bag with: 2 x fastening clip for connection pieces 2 x hose clip for drain hose 1 x sealing plug for overflow 1 x connection elbow for overflow 2 x spare O-rings for connection adapter 1 x power supply unit 1 x grease container for O-rings
-	1	Service manual
-	1	Operating manual

If not installed on site, to be provided by the operator

In addition to the components included in the scope of delivery, the following components are required (if not already fitted in the piping system):

Pressure reducing valve (if necessary)

Where necessary, the pressure reducing valve reduces the input pressure to the water softener to no more than 5 bar.

Drinking water filter


The drinking water filter filters impurities out of the raw water before it enters the water softener.


2 Safety

2.1 Explanation of symbols

Safety notices

Safety notices are marked with symbols in this manual. The safety notices are introduced by signal words that emphasise the extent of the hazard.

 WARNING
This combination of symbol and signal word indicates a possibly dangerous situation which could lead to death or severe injury if not avoided.

 CAUTION
This combination of symbol and signal word indicates a possibly dangerous situation which could lead to minor or slight injuries if not avoided.

<i>NOTE!</i>
This combination of symbol and signal word indicates a possibly dangerous situation which could lead to property damage if not avoided.

Tips and recommendations



This symbol highlights useful tips, recommendations and information for efficient and fault-free operation.

2.2 Avoidance of risks

Microbiological and sensory water quality

⚠ WARNING

Danger to health due to improper installation and operating conditions!

The microbiological and sensory quality of softened water is highly dependent on the installation and operating conditions of the water softener. There is a danger to health if the water softener is used improperly.

Moreover, odours can also form.

- ▶ Avoid long shutdown periods of the water softener. To do this, observe the specified recharge intervals.
- ▶ Only use salt compliant with DIN EN 973 Type A.
- ▶ Only use salts approved according to biocide legislation.
- ▶ The water softener must be serviced annually.
- ▶ Comply with the operating and ambient conditions given in the operating data (see section „11 Operating data“ on page 49).
- ▶ The raw water used must as a minimum be of drinking water quality.
- ▶ Do not feed the water softener with water from a well.
- ▶ When assessing the water quality, in addition to the function of the water softener consider other influencing factors:
 - Pipe material:
 - Possible other additional equipment (water heaters, hot water tanks, etc.)
- ▶ Regularly clean the drinking water filter to prevent algae formation.

Microbial contamination of the drinking water

⚠ WARNING

Danger to health due to microbial contamination of the water softener!

If the water softener is not used for a long time, the drinking water can become contaminated. Recharging of the water softener counteracts this.

- ▶ Do not disconnect the water softener from the mains electricity and water supply when you go away.
- ▶ After long periods without use, perform a water softener recharge.
- ▶ Adhere to the specified recharge intervals.
- ▶ Replace the chlorine disinfection unit after no more than two years.

Power failures

⚠ CAUTION

Risk of flooding in the event of a power failure!

The electrically operated control valve does not shut off the water supply if there is a power failure.

- ▶ In the event of a power failure, shut off the water supply to the water softener.
- ▶ The water softener overflow routes overflowing water to the wastewater connection.

Contact with wastewater

⚠ CAUTION

Danger to health due to contact with wastewater!

The wastewater has a high salt concentration; in case of contact, there is a health risk.

- ▶ In the event of skin contact, rinse off the affected area with plenty of water.
- ▶ In the event of eye contact, flush the eyes with open lids and running water.
- ▶ If swallowed, rinse out your mouth and drink plenty of water.
- ▶ If symptoms persist, consult a doctor.

Contact with water softening salt

⚠ CAUTION

Danger to health due to inhalation, skin/eye contact or swallowing of water softening salt!

Water softening salt can be harmful to health in the event of direct skin/eye contact, inhalation or swallowing.

- ▶ After filling the salt reservoir, wash the hands thoroughly with plenty of water.
- ▶ If inhaled, go to an area with fresh air.
- ▶ In the event of skin contact, rinse off the affected area with plenty of water.
- ▶ In the event of eye contact, flush the eyes with open lids and running water.
- ▶ If swallowed, rinse out your mouth and drink plenty of water.
- ▶ If symptoms persist, consult a doctor.

Use of softened water

NOTE!

Property damage due to the use of softened water!

The quality of softened water differs from that of normal tap water. If used without care, plants or aquatic animals may be harmed.

Plants and aquatic animals have special requirements in respect of the composition of water.

- ▶ Check the tolerance of plants or aquatic animals before using softened water.

2.3 Intended use and foreseeable misuse

Use

The water softener is intended solely for the treatment of drinking and process water within the performance limits specified in this document (see section „11 Operating data“ on page 49). DVGW regulations are binding. Failure to comply with these regulations constitutes misuse of the water softener.

In particular:

- ▶ All components of the water softener must be correctly installed.
- ▶ Maintenance intervals must be adhered to.

Any use other than the intended use is considered as misuse of the water softener.

Misuse

⚠ WARNING

Danger during misuse!

Misuse of the water softener can cause dangerous situations and damage to the water softener.

- ▶ Do not feed the water softener with water other than water of drinking water quality.
- ▶ Do not feed the water softener with water from a well.
- ▶ Do not independently modify the water softener without authorisation.
- ▶ Do not install water softeners in extinguishing and firefighting pipe systems.
- ▶ Do not invert the water softener.
- ▶ Do not position the water softener in continuous sunlight.
- ▶ Do not install the water softener in locations where frost and damp may occur.



DVGW standards

Your water softener is certified according to DVGW standards (German Technical and Scientific Association for Gas and Water).

The certification ensures that recognised codes of practice have been complied with and that safety criteria (e.g. prevention of microbial contamination, guaranteed effectiveness of the water softener) have been fulfilled.

To maintain this certification, certain water softener settings must not be changed.

- ▶ Only add salt tablets marked as DIN EN 973 Type A. They can be obtained from retailers.
- ▶ Only use salt tablets approved according to biocide legislation.

3 Installation

3.1 Installation plan

- A House connection line
- B Garden shutoff valve
- C Shutoff valve with check valve
- D Tapping point for testing raw water hardness (*optional)
- E Drinking water filter / including pressure reducer
- F Bypass mixing valve
- G Pressure gauge (*optional)
- H Tapping point for testing soft water (*optional)
- I Shutoff valve
- J House distribution
- K Drain hose for overflow protection
- L Water softener outlet
- M Drain hose for wastewater
- N Water softener inlet
- O Wastewater connection adapter

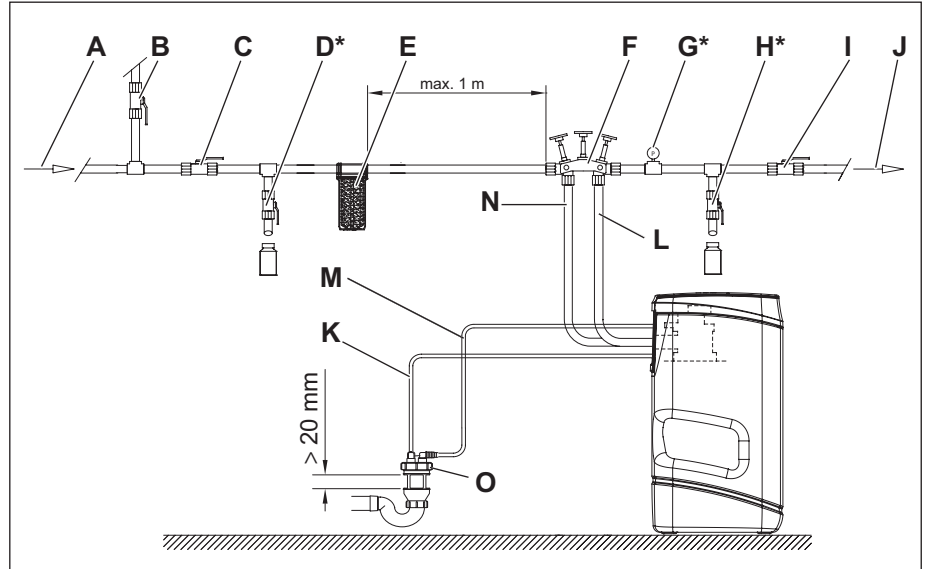


Fig. 3: Installation plan

3.2 Requirements for the installation location

Integration in the existing piping system



The water softener is integrated into the existing piping system using the bypass mixing valve (automatically operating mixing valve).

Use of the bypass mixing valve means that it is not necessary to fit an additional bypass pipe.

Requirements for the connection location

The following are required for connection of the water softener:

- 230 V isolated earthed socket
- Drain, DN 40 spigot
- Sufficiently dimensioned and dry free space at the installation location

Moreover, the installation location must fulfil the following requirements:

- Clean
- Well ventilated
- Adequately lit
- Protected against pests
- Protected against frost
- Protected against physical damage
- Remote from or isolated from heat sources
- As close as possible to the existing water distribution system so that dead spaces that might promote stagnation are avoided or limited
- Wastewater drain in the immediate vicinity

Before installing the water softener, shut off the main water supply.

NOTE!

Switch off downstream components

- ▶ For safety, switch off downstream components, such as heaters, hot water generators, etc..

1. Isolate the upstream shut-off valve with check valve (Fig. 3/C) and shut-off valve (Fig. 3/I).
2. Open test valves (Fig. 3/D and Fig. 3/H).
⇒ The piping system has been depressurised.
3. Check the piping system is depressurised.



Checking the pressure

The pressure gauge (Fig. 3/G) must indicate a pressure of 0 bar.

Installing additional components (if not already fitted)

Equipment:

- Drinking water filter
- Pressure reducing valve (if necessary)

1. Install the drinking water filter (Fig. 3/E) at a distance of no more than 1 m from the bypass mixing valve on the inlet side of the water softener.
2. If necessary, install the pressure reducing valve upstream of the bypass mixing valve (Fig. 3/F) and the drinking water filter (Fig. 3/E).



Checking the pressure

The pressure gauge (Fig. 3/G) must indicate a pressure of 0 bar.

3.3 Installing the bypass mixing valve

Valve positions of the bypass mixing valve

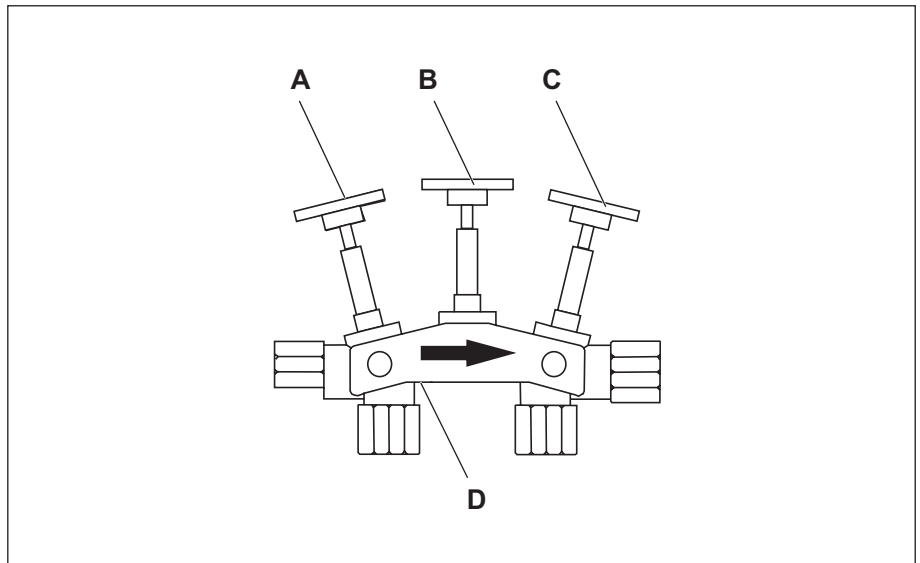


Fig. 4: Valve positions of the bypass mixing valve

- Operating position
 - Outer shutoff valves (A and C) open.
 - Middle shutoff valve (B) closed.
- Bypass position
 - Middle shutoff valve (B) open.
 - Outer shutoff valves (A and C) closed.



Adjusting the mixing

The mixing of softened water (0 °dH) and raw water is adjusted by unscrewing the mixing screw (D).
Water hardness of 6 - 8 °dH is recommended.

Direction of installation of the bypass mixing valve

- ▶ Install the bypass mixing valve with the arrowhead in the direction of flow (Fig. 4) of the on-site piping system.

3.4 Installing the drain connection

- A Connection for drain adapter
- B Flow limiter
- C Cotter pin
- D Drain hose adapter
- E Hose clamp
- F Drain hose

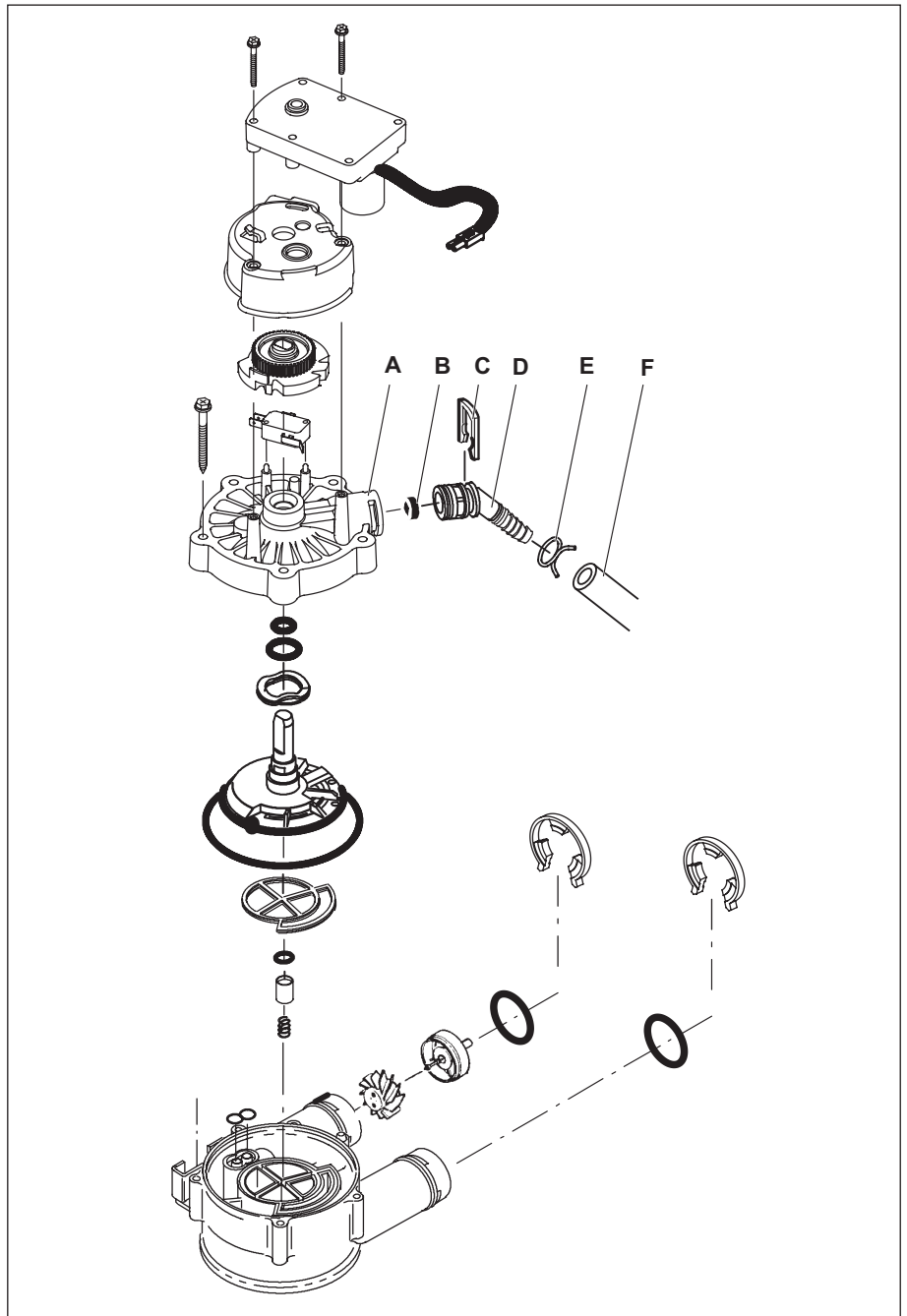


Fig. 5: Installation of the drain hose



Drain hose

The drain hose (F) is intended for installation at the wastewater connection and at the overflow (see section „3.5 Installing the overflow“ on page 20). Divide the drain hose dependent on the distances and shorten if necessary.

1. Fit hose clamp (E) on to drain hose (F).
2. Push drain hose (F) on to drain hose adapter (D).
3. Fix the drain hose (F) using hose clamp (E) on the drain hose adapter (D).

3.4.1 Routing the drain hose to the wastewater drain

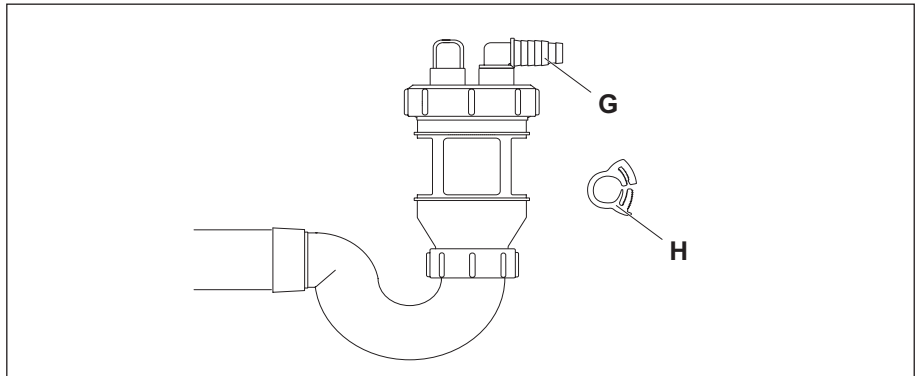


Fig. 6: Wastewater connection

- ▶ Attach the drain hose (F) to one of the hose nozzles (G) on the wastewater connection and secure it with a hose clip (H).

3.5 Installing the overflow

- A Drain hose
- B Hose clamp
- C Grommet
- D Connection angle
- E Overflow opening

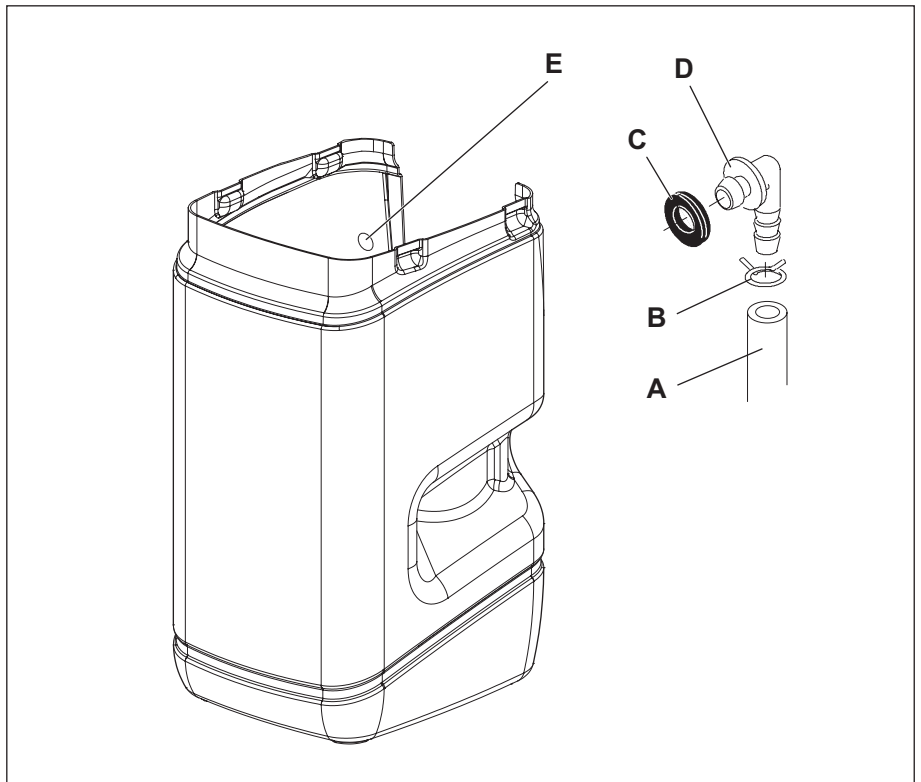


Fig. 7: Installing the overflow



Overflow

In the event of a malfunction, the overflow routes overflowing water to the drain.

1. Fit the hose clamp (B) onto the drain hose (A).
2. Push the drain hose (A) onto the connection elbow (D).
3. Fix drain hose (A) to the connection elbow (D) using hose clamp (B).

4. Fit grommet (C) into the overflow opening (E) in the salt reservoir.
5. Press connection elbow (D) into grommet (C).
6. Route the drain hose (A) with a slope to the wastewater connection.

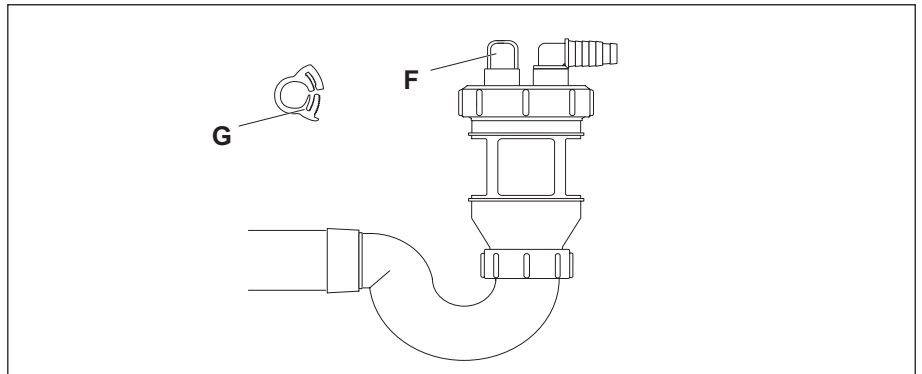


Fig. 8: Wastewater connection

7. Attach the drain hose (A) to the still free hose nozzle (F) on the wastewater connection and secure it with a hose clip (G).

3.6 Connecting the water softener

Checking the turbine for free running

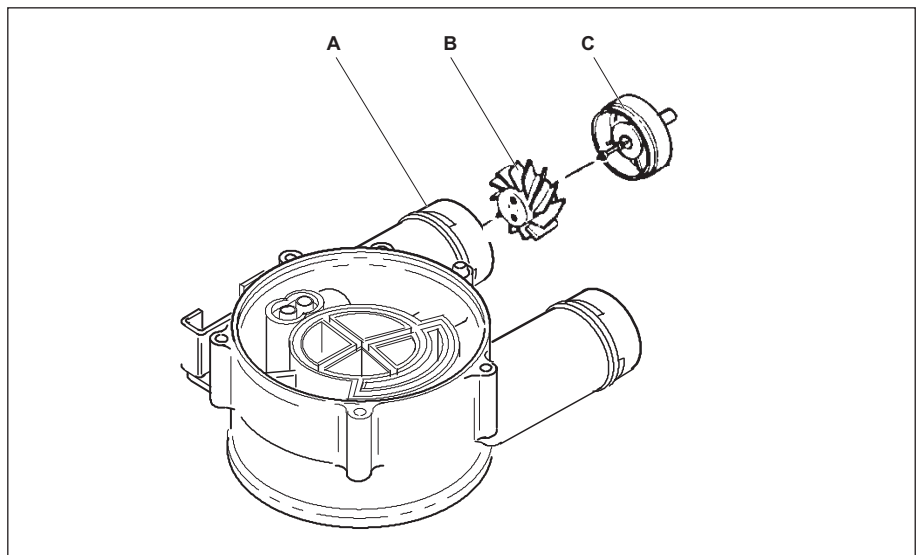


Fig. 9: Turbine

- ▶ The turbine (B and C) is located in the outlet of the valve assembly (A). Check that it sits straight.



If the turbine (B and C) is not functioning correctly, remove it and reinsert it into the outlet of the valve assembly (A).

Fitting the connection adapter

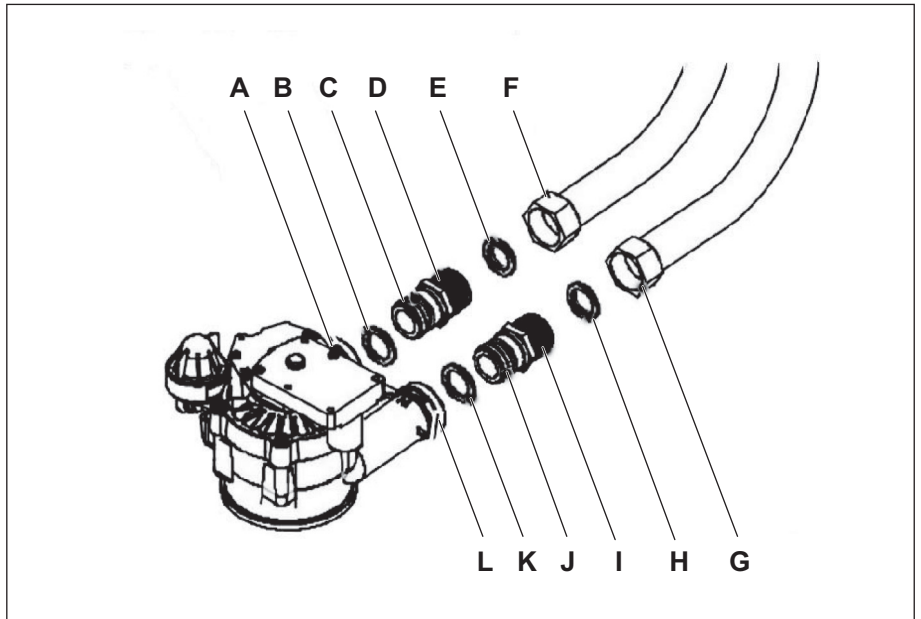


Fig. 10: Fitting the connection adapter

1. Lightly grease the O-rings on the connection adapters (C and J) using silicone grease (supplied).



The connection adapter with check valve (I) is marked "IN". This marking is also found on the valve assembly. Confusing the connection adapters so they are connected incorrectly leads to a malfunction

2. Insert the connection adapter with the check valve ("IN", I) into the inlet of the water softener (L).

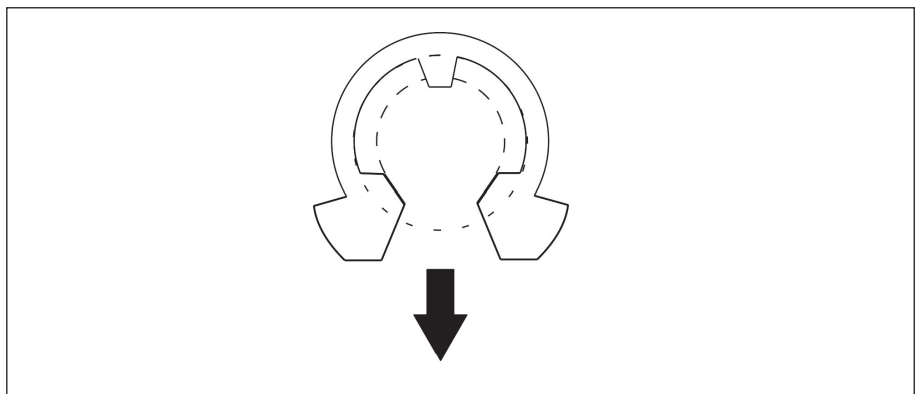


Fig. 11: Fitting the C-clip

3. Secure the connection adapter using the C-clip at the inlet (L) of the valve.



Align the opening of the C-clip downwards (Fig. 11).

4. Insert the connection adapter (**WITHOUT check valve**, D) in the outlet of the water softener (A).
5. Secure the connection adapter using the C-clip at the outlet (A) of the valve.



Align the opening of the C-clip downwards (Fig. 11).

6. Screw the union nuts (F and G) of the armoured hoses to the connection adapters (D and I).



Insert flat seals

When screwing on the armoured hoses, ensure that the flat seals (E and H) are located in the union nuts.

NOTE!

Damage to the valve assembly!

Counter-hold the connection adapter with a suitable spanner and tighten the union nuts.

Making the connection to the bypass mixing valve

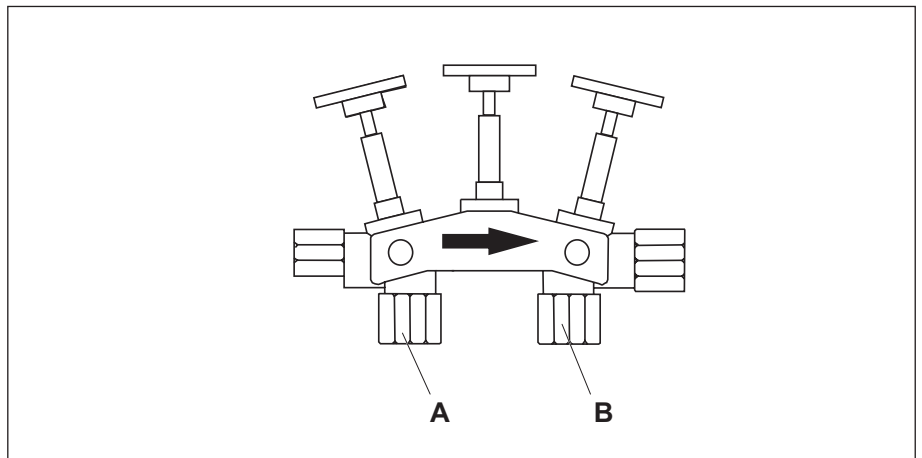


Fig. 12: Bypass mixing valve

1. Screw the armoured hose (valve inlet, G) to the connection to the **left below** the flow direction arrow of the bypass mixing valve (A).



Insert flat seals

When screwing on the armoured hoses, ensure that the flat seals are located in the union nuts.

2. Screw the armoured hose (valve outlet, F) to the connection on the **right below** the flow direction arrow of the bypass mixing valve (B).

4 Commissioning

4.1 Adding salt

Salt quality

NOTE!

Malfunctions due to poor salt quality!

If unapproved salt tablets are used, there is a danger of malfunctions. Moreover the DVGW certification is invalidated.

Only use salt tablets that are marked as follows:

- Salt quality according to DIN EN 973 Type A
- Approved according to biocide legislation

Filling the salt reservoir

- ▶ Fill the salt reservoir halfway with salt tablets.

4.2 Making the power connection

1. Connect the power pack to the water softener.
2. Plug the power pack into the socket.

4.3 Carrying out basic settings

Other than during commissioning, the settings to be made here can be changed by pressing **OK** in the normal display (time display).

4.3.1 Checking the model code

When the water softener is first connected to the power supply, the model code and test number r4.2 flash on the display (A).

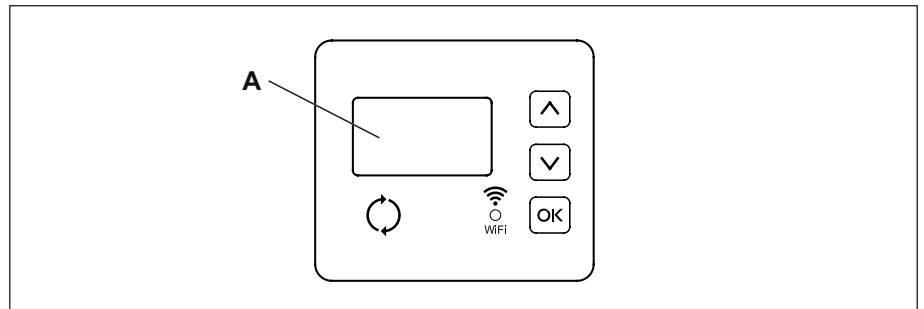


Fig. 13: Control panel and display

Model	Code
LEYCOsoft Pro 9	dA9
LEYCOsoft Pro 15	dA15

If the code does not match the model in question, change it. For more information, see „8.4 Setting the model code“ on page 37.



4.3.2 Setting the current time

1. Press **^** or **v**, until the desired time is displayed.



Keep **^** or **v** pressed to change the time quickly.

2. Press **OK**.



4.3.3 Setting the hardness

1. Determine the raw water hardness using the water hardness test kit (supplied).
2. Press **^** or **v**, until the previously measured raw water hardness is displayed.
3. Press **OK**.

4.3.4 Setting the recharge time



Preset recharge time

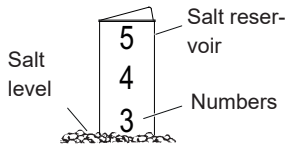
The recharge time should be set at a time during which no water will be required.

The default setting is 02:00 a.m.



1. Press or , until the desired recharge time is displayed.
2. Press .

4.3.5 Setting the salt level



1. Level the salt level in the reservoir. The salt should be evenly distributed in the salt reservoir to obtain the best possible monitoring result.
2. Inside the salt reservoir there is a tube with numbers from 0 - 5. The last number that can be seen is used in the following setting.



3. Press or until the number on the screen matches the actual salt level. If the salt level is 2 or lower, the display flashes "LOW SALT LEVEL".

The function can also be disabled using the "OFF" setting.



4. After setting the salt level, press .
⇒ The time of day is now displayed.



4.4 Ventilating the water softener and checking for leaks

Starting manual recharging for venting

1. Press and hold the **RECHARGE** button for three seconds.
 - ⇒ “RECHARGE NOW” flashes on the display.
 - ⇒ The motor starts up audibly when recharging starts.
 - ⇒ Motor stops at 1st operating cycle **BackWash**.
2. Briefly press the **RECHARGE** button.
 - ⇒ The motor starts up audibly.
 - ⇒ Motor stops at 2nd operating cycle fast rinse **Rinse**.
3. Briefly press the **RECHARGE** button.
 - ⇒ The motor starts up audibly.
 - ⇒ Motor stops at 3rd operating cycle **Fill**.
4. Briefly press the **RECHARGE** button.
 - ⇒ The motor starts up audibly.
 - ⇒ Motor stops at 4th operating cycle **BRine**.
5. Briefly press the **RECHARGE** button.
 - ⇒ The motor starts up audibly.
 - ⇒ Motor stops at 5th operating cycle **BackWash**.

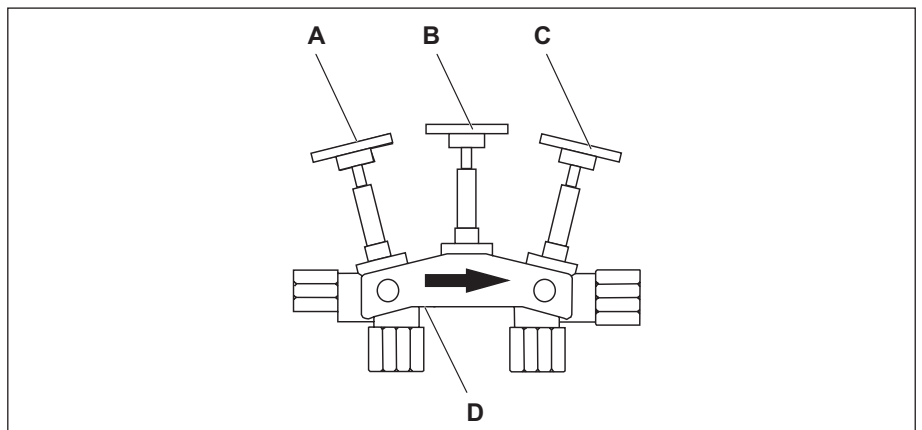


Fig. 14: Bypass mixing valve

6. After reaching the 5th operating cycle **BackWash**, open shutoff valve (A) of the bypass mixing valve.
 - ⇒ The recharging waste water is flushed into the wastewater.
 - ⇒ After **BackWash**, the water softener changes to the next phase.
 - ⇒ The last recharge phase is Rinse.
 - ⇒ After completion, the motor remains in the Service operating position.
 - ⇒ The current time is shown on the display.



The 2 rinsing steps of step 6 must be fully completed so that all residues and resin stains can be flushed out and cannot get into the salt tank.

7. Open a cold water tap downstream of the softening system.
8. Position the bypass mixing valve in the operating position.
 - Close middle shutoff valve (B).
 - Open shutoff valve (C).
9. Turn off the cold water tap

Checking the water softener for leaks

1. Checking the water softener for leaks.
If there are any leaks, check that screw connections are tight enough and that all the sealing elements provided are fitted.
2. Check that the drain hose is securely seated in the water softener.

Adjusting the mixing


- ▶ Screw out mixing screw (D) with a suitable screwdriver and set to the desired hardness.

Measuring the soft water hardness and readjusting the mixing

1. Open the closest cold water tap downstream of the mixing location for 10 seconds.
2. Then measure the water hardness. To do so, follow the instructions in the enclosed hardness measuring kit.
3. If the measured hardness does not match the desired hardness (6°dH-8°dH is recommended), readjust the mixing. To increase the hardness, screw out the mixing screw, to reduce it, screw it in.
4. After the adjustment, measure the hardness again. Repeat this process until the desired hardness has been reached.



4.5 Carrying out manual recharging

1. Press  and keep pressed for 3 seconds until there is an audible signal.
⇒ “RECHARGE NOW” flashes on the display and the recharge is carried out.



Recharge start

The motor starts up audibly when recharging starts.



Recharge duration

The recharge duration is:

- 1.5 hours for LEYCOsoft Pro 9
- 2.5 hours for LEYCOsoft Pro 15

During a recharge, only unsoftened water is available.



After the operating cycles have been run through, the controller switches over to automatic mode.

2. Switch on the downstream components (e.g. heater, hot water generator, etc.).

5 Connecting to the Internet/WiFi and setting up the app

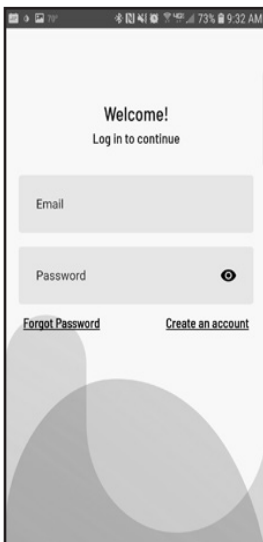
5.1 Downloading the iQua™ App

Go to the App Store or Google Play and download the iQua™ App. This must be installed on a smartphone to set up an account and connect the water softener to the cloud.

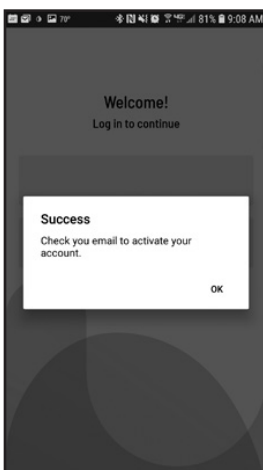


5.2 Setting up the account

1. Start the iQua™ App.
2. On the start screen press “*Create an account*”.
3. Fill in the necessary fields. In doing so, ensure the mandatory fields, marked with an *, are filled out.
4. Agree to the conditions and optionally select whether you would like to receive further information and confirm with “*Complete*”.



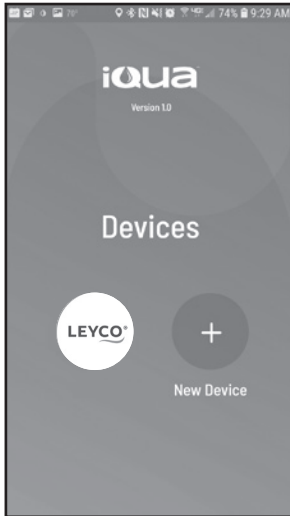
5. A message with a request for final account activation is displayed. In accordance with this message, you should have received an activation email at the specified email address. If you cannot see this in your inbox, check the spam or junk folder and set the myiqua.com email address as safe in your email settings so that future messages will not be blocked.



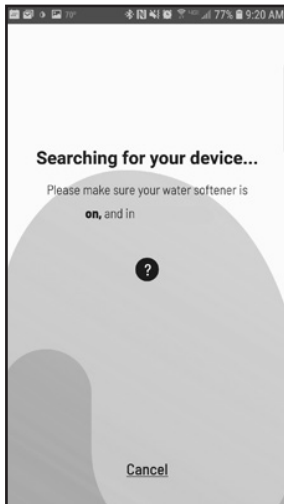
6. Activate your account by following the instructions in the email.

5.3 Connecting and registering the water softener

1. Login with your email address and the password you were given.
2. Press on the “+” symbol to add your water softener.



3. Follow the instructions on the smartphone display to place the water softener in pairing mode or see under „Pairing mode / connection status light“ on page 33 in this manual for more instructions.



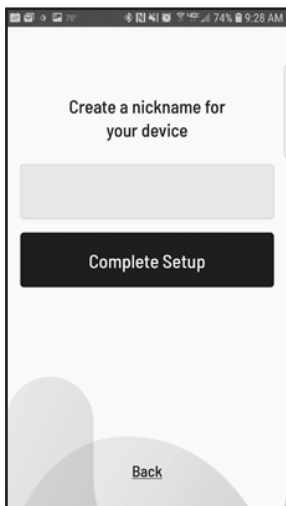
4. The app screen now displays a list of devices that are in range. The list should include a name that begins with **WCD** and is followed by a number. This is your LEYCOsoft Pro water softener. Select the water softener and your screen changes to “Pairing your device...”.
5. When the water softener’s display changes from “Conn” to “C-1”, then it is communicating with your smartphone.







- 6. The app screen now displays a list of WiFi networks that are in range. Select the desired WiFi network and enter the WiFi password. This WiFi network must have a live Internet connection. Confirm with Save & Continue.

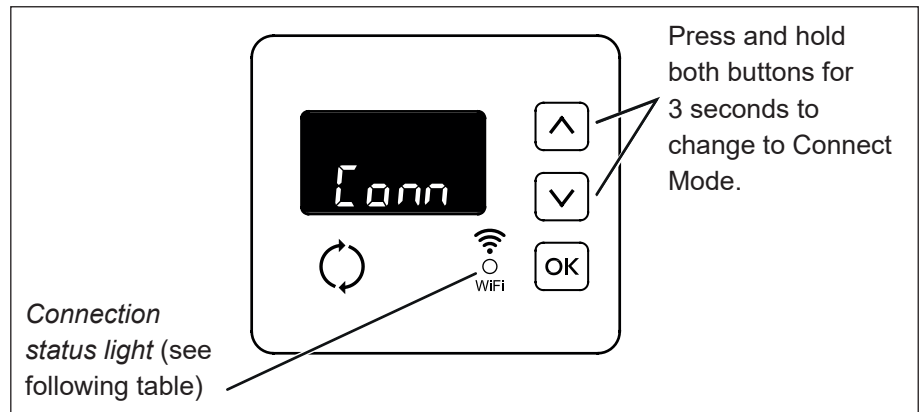
- 7. The water softener's display changes to "C-2" once the system has created a connection to the home's wireless network. Then it changes to "C-3" when it has connected to the iQua™-Server in the cloud.



- 8. The app asks you to create a nickname for your device (water softener). This is displayed in the "Devices" list upon logging in. After entering the name, press "Complete Setup". The water softener changes to normal operating status.

5.4 Pairing mode / connection status light

1. Ensure that the water softener is in the normal status display (time without any other information).
2. Press  and  simultaneously and keep pressed for 3 seconds.



3. Release the buttons once "Conn" is displayed and the connection status light starts to flash in yellow.
4. The system is now in pairing mode, which it remains in for 15 minutes during which it is ready for connection to the cloud. If the coupling mode displays "Timed out" and the connection status indicator is off, pairing mode must be reactivated.

Display of the connection status light	Status
Flashing yellow	The system is in pairing mode and is waiting for a connection.
Green	System successfully connected to the cloud and registered.
Red	The system is currently receiving an over-the-air update.
No light	System not currently connected to the cloud.

6 Salt level monitoring system



After each addition of a water softener, the salt level must be set. The salt monitoring system estimates the salt level, with the accuracy varying depending on the type of salt. If the salt level is 2 or lower, the display flashes "LOW SALT LEVEL" to remind you that the salt must be refilled.

Section „4.3.5 Setting the salt level“ on page 26 describes setting of the salt level.

7 Manual recharge



Recharge types

- **Manual recharge**

Starts a recharge cycle.

A manual recharge makes sense in the following cases:


- The water consumption is higher than usual and it can be assumed that there is no longer any soft water available.
- The salt reservoir has been completely emptied and it must be refilled.
- After long periods during which the water softener has not been used.

- **Planned recharge**

The recharge is performed at the set recharge time.



7.1 Manual recharge

- ▶ Press  and keep pressed for 3 seconds until there is an audible signal.
- ⇒ "RECHARGE NOW" flashes on the display and the recharge is carried out.



Recharge start

The motor starts up audibly when recharging starts.



Recharge duration


The recharge duration is:

- 1.5 hours for LEYCOsoft Pro 9
- 2.5 hours for LEYCOsoft Pro 15

During a recharge, only unsoftened water is available.



7.2 Planned recharge

- ▶ Press .
- ⇒ "RECHARGE TONIGHT" flashed on the display.
- ⇒ The recharge takes place at the set recharge time (default setting 02:00 a.m.).
Setting the recharge time, see section „4.3.4 Setting the recharge time“ on page 26.

8 Settings

All the subsequent settings are advanced settings made in a lower level of the water softener control system. For basic settings, such as time, water hardness, etc., see „4.3 Carrying out basic settings“ on page 25. Alternatively, these basic settings are also included in the operating manual (for the operator).

8.1 Setting the time format



Time format

By default, the water softener is set to a 24-hour time format.

This can optionally be changed to a 12-hour format.

- For times from midday to midnight, the addition **PM** is displayed.
- For times from midnight to midday, the addition **AM** is displayed.

If the time is set incorrectly, recharging takes place in the day rather than at night.



1. Press and hold **OK** until the menu "000 --" is displayed.



2. Press **OK** six times.
⇒ The setting "SET TIME 24 HR" flashes.



3. Press **^** or **v** to select the desired time format.
4. Press **OK** until the normal display (time) is displayed again.

8.2 Setting the maximum interval between two recharge cycles



Recharge interval

The maximum time interval between two recharges is 4 days, otherwise the setting does not comply with the DVGW certification.

The already set recharge time (see section „4.3 Carrying out basic settings“ on page 25) is retained.

The setting of the maximum interval between two recharge cycles is displayed by “SET RECHARGE 1– 4.dAy”.

The purpose of the set cycle is only for hygienic safety and is not the fixed recharge cycle. Primarily, the recharge point is decided by the water consumption.



1. Press and hold until the menu “000 – –” is displayed.
2. Press until “SET RECHARGE 4.dAy” is displayed.
3. Press or to set the desired recharge cycle.

⚠ WARNING

Danger to health due to microbial contamination of the water softener!

The maximum interval between two recharge cycles is set at 4 days by the DVGW certification.

Exceeding this interval can result in microbial contamination of the drinking water. Recharging of the water softener counteracts this.

4. Press until the normal display (time) is displayed again.

8.3 Restoring the default settings



1. Press and hold **OK** until "CODE" is displayed and then the model code.
2. Press **^** until "SoS" flashes on the display.
3. Press **OK** to restore the default settings.



If the default settings of the water softener are restored, the following settings must be renewed:

- Section „4.3 Carrying out basic settings“ on page 25
- Section „4.3.3 Setting the hardness“ on page 25
- Section „8.1 Setting the time format“ on page 35

Recharging settings are not affected.

⇒ The default settings of the water softener have been restored

8.4 Setting the model code



After a circuit board change, during commissioning the display indicates "----".

In this case start with step 3.



1. Press and hold **OK** for 3 seconds until "000 --" is displayed.
2. Press and hold **OK** for 3 seconds to display the model code.
3. Press **^** or **v**, until the desired model code is selected.

Model	Code
LEYCOsoft Pro 9	dA9
LEYCOsoft Pro 15	dA15

4. Press **OK** to confirm the displayed model code and return to "SET TIME".



Changing the model code means it is necessary to reset all the time settings.

- Section „4.3 Carrying out basic settings“ on page 25
- Section „8.1 Setting the time format“ on page 35

9 Maintenance

9.1 Checking and inspection work

The operator of the water softening system is obliged to carry out checking and inspection work at regular intervals.

The following work must be carried out at least every **2 weeks**:

- Checking the salt level (see operating manual in the section “Adding salt”). This type of check can be omitted if the salt level monitoring system including active connection to the iQua app is used. In this case the salt level is checked via the app.

The following work must be carried out at least every **2 months**:

- Checking of the raw water hardness and comparison with the value set in the water softener (see section „4.3.3 Setting the hardness“ on page 25)
- Checking of the soft water hardness (see section „Measuring the soft water hardness and readjusting the mixing“ on page 28)
- Visual checking for integrity and for possible leaks
- Water level in the salt reservoir
Under normal operating conditions and with a sufficient stock of salt, the water level cannot normally be seen. It may only be a few centimetres from the ground.
- Checking the wastewater flow
Under normal operating conditions, water must not flow through either the overflow hose or the wastewater hose.

The following work must be carried out at least every **6 months**:

- Checking for salt bridges (see section „10.6 Checking the salt reservoir“ on page 46)
- Cleaning of the salt reservoir

9.2 Maintenance work

In addition to the actions carried out by the operator, maintenance work must be carried out by a trained technician. The appointment of the technician and checking of the timely execution are the responsibility of the operator.

Every **12 months** a **minor service** must be carried out with the following work:

- General visual and operating check
- Checking of the brine line
- Leak check
- Servicing of the injector
- Servicing of the brine valve

Every **24 months** a **major service** must be carried out with the following work:

- All tasks of the minor service (so that a minor service is not required)
- Servicing of the control head
- Replacement of the chlorine cell

Separate, detailed instructions and content for the minor and major services by the technician are included in the respective maintenance kits or can be requested from support.

The contents of the separate instructions are defining for the maintenance work (minor and major service). The points mentioned here are for orientation only.

10 Faults

10.1 Fault table

Error description	Cause	Remedy
No soft water at all.	No salt in the salt reservoir.	Add salt and start a manual recharge (see operating manual for procedure).
	Salt bridge in the salt reservoir.	Break salt bridge (see operating manual for procedure).
	Water softener not connected to the power supply.	Connect the water softener to the power supply. Then, if necessary, set the time (see section „4.3 Carrying out basic settings“ on page 25).
	Bypass mixing valve in the bypass position.	Position the bypass mixing valve in the operating position (see „Valve positions of the bypass mixing valve“ on page 18).
	Dirty, clogged or damaged nozzles, valve assembly or seals.	Remove nozzle, seal and valve assembly and check for integrity. If necessary clean or replace.
	Drain hose clogged/kinked.	Correct routing (see page 20) and ensure fault-free condition of the drain hose. If necessary clean or replace.
Intermittently no soft water.	Current time incorrectly set.	Reset the current time (see section „4.3.2 Setting the current time“ on page 25).
	Recharge time incorrectly set.	Reset the recharge time (see section „4.3.4 Setting the recharge time“ on page 26).
	Raw water hardness incorrectly set.	Determine the raw water hardness again and enter in the controller (see section „4.3.3 Setting the hardness“ on page 25).
	Turbine does not rotate freely.	Check turbine, replace if necessary (see section „10.7 Testing the turbine meter“ on page 48).
	Leaking valve assembly mixing hard and soft water.	Check the valve assembly for defective sealing parts/ rotor disc or shaft washer and replace if necessary.
	Leaking valve assembly mixing hard and soft water.	If the sealing ring on the valve closure of the riser tube is missing or defective, insert or replace it.

Error description	Cause	Remedy
	Recharge settings are incorrect.	Check the recharge settings (see section „8.2 Setting the maximum interval between two recharge cycles“ on page 36), if necessary, enter new settings.
The water tastes salty.	The household water pressure is less than 1.4 bar.	Take actions to increase the pressure.
	The valve drain hose/ upper manifold/back-flow plug/lower manifold and/or the inner riser tube of the resin tank are blocked.	Remove the assemblies concerned, clean and refit.
	An incorrect model code has been set.	Check the model code and adjust (see „4.3.1 Checking the model code“ on page 25).
No display.	Power supply interrupted.	Remake power supply.
	Power supply interrupted.	Check site fuses.
	Wiring harness connection has come loose from the circuit board.	Check the connection of the wiring harness to the circuit board (see appendix „C Circuit board“ on page 57).
Unusual motor noise or motor stopped.	Malfunction of the motor or valve error, that leads to a high torque acting on the motor	Check the sealing part and rotor disc in the controller head.
Error code E1 in the display.	Error in the connections with the position switch.	Check position switch for integrity and check the wiring harness connection.
Error code E3 or E4 in the display.	Timing coordination error between valve motor cam and position switch.	Contact the manufacturer (see „Contact information“ on page 4).
Error code E5 in the display.	Electronic controller malfunction.	Contact the manufacturer (see „Contact information“ on page 4).
The salt reservoir is flooded.	Valve assembly clogged.	Remove valve assembly, clean and fit.
	Valve seals defective.	Remove valve seals, check and, if necessary, replace.
	Drain hose clogged/ kinked.	Ensure correct routing and fault-free condition of the drain hose. If necessary clean or replace.
Water escapes out of the drain hose during operation.	Rotor/rotor disc, seal or shaft washer defective.	Remove defective component, check and, if necessary, replace.

Procedure in the event of faults

1. Perform an initial test (see section „10.3 Performing an initial test“ on page 43).
2. Perform manual diagnostics (see section „10.4 Performing manual diagnostics“ on page 44).
3. Perform manual test for early recharge (see section „10.5 Testing manual recharging“ on page 45).

10.2 Error code acknowledgement

1. Check water softener for external defects.
2. Disconnect the power supply.
3. Rectify the fault (see section „10 Faults“ on page 40).
4. Remake power supply.
5. Wait six to eight minutes until the automatic diagnostics have been performed.

**Automatic diagnostics**

The water softener has a self-diagnostic function for the electronic system (with the exception of the power supply and flowmeter). If a fault exists, an error code is displayed.

⇒ If the fault is successfully cleared, the error code goes out.

**Repeated error code**

The error code is displayed again if the fault has not been cleared.

10.3 Performing an initial test

The initial test is used to narrow down the source of the fault and includes basic maintenance activities. If no fault source has been identified after the initial check, continue with the manual diagnostics (see chapter „10.4 Performing manual diagnostics“ on page 44).

1. Check that the power supply is firmly connected.
2. Check the control panel for any error code displays.



Error code

If an error code is displayed, clear the fault and then acknowledge it (see section „10.2 Error code acknowledgement“ on page 42).

3. Check the current time on the control panel.



Setting the current time

If the time displayed is incorrect, set the actual time (see section „4.3.2 Setting the current time“ on page 25).

4. Remove any salt bridge, if one is present.
5. Check the salt level



Topping up the salt

If the salt level is low, fill the salt reservoir halfway with salt tablets.

6. Set the bypass position at the bypass mixing valve (see section „3.3 Installing the bypass mixing valve“ on page 18).
7. Check the water inlets and outlets of the bypass mixing valve and the water softener for secure seating.
8. Check the drain hose for kinks and secure seating.
9. Check that the brine hose is securely seated.
10. Set the bypass position on the bypass mixing valve back to the operating position.
11. Check the hardness settings of the water softener to see that they match the actual hardness value of the water upstream of the water softener.









Deviating hardness setting

If the set hardness is not the same as the actual hardness value, the hardness value must be set again at the water softener (see section „4.3.3 Setting the hardness“ on page 25) in order to achieve the desired soft water hardness value.

10.4 Performing manual diagnostics

Manual diagnostics checks the functioning of the water flow. Operating days, the number of recharges since commissioning and the model code can be displayed.



1. Press and hold  for 3 seconds until “000 --” is displayed.
2. Press .
 - Displays the operating days of the water softener since commissioning.
3. Press .
 - Displays the number of recharges since commissioning of the water softener.
4. Press and hold  for 3 seconds to display the model code.
 - Press  or , until the desired model code is selected.



Changing the model code means it is necessary to reset all the time settings.

- Section „4.3 Carrying out basic settings“ on page 25
- Section „8.1 Setting the time format“ on page 35

5. Press  to confirm the current display and to return to the current time.

10.5 Testing manual recharging

The manual recharge test checks for fault-free operation of the position switch, the gear motor and the correct sequence of the recharge phases.

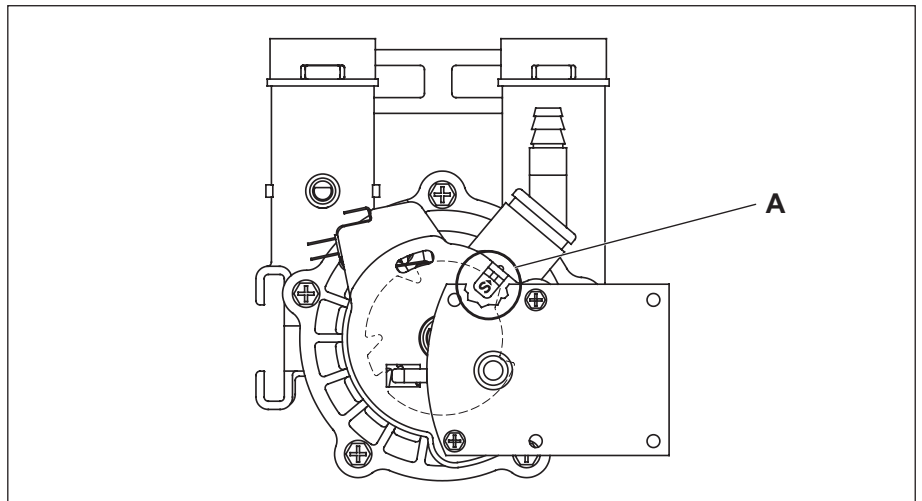





Fig. 15: Position switch

1. Perform an initial test (see section „10.3 Performing an initial test“ on page 43).
 2. Remove the water softener cover in order to see the position switch (A).
 3. Press and hold  for 3 seconds.
- ⇒ “Recharge” flashes on the display.




The motor starts up audibly when recharging starts.

- ⇒ The operating cycle “*Backwash (BW)*” starts.
4. Press .
- ⇒ The operating cycle “*Fast rinse (R)*” starts.
5. Press .
- ⇒ The operating cycle “*Fill (F)*” starts.
6. Check whether the brine valve flushes water into the salt reservoir.

If the salt reservoir does not fill with water, the following components must be checked for defects or dirt:

- Injector and valve assembly
- Flow limiter
- Brine hose
- Riser tube

7. Press .
- ⇒ The operating cycle “*Brine (BR)*” starts.

8. If the salt reservoir does not empty, the following components must be checked for defects or dirt:
 - Check the injector and valve assembly for dirt or damage.
 - Check the seals for leak tightness.
 - Check that the seal and valve assembly are securely seated and reseal if necessary.
 - Check the drain hose for kinks, and remove if necessary.
 - Check the valve assembly and brine hose for clogging.
9. Press ↻.
 - ⇒ The operating cycle “*Backwash (BW)*” starts.
10. Press ↻.
 - ⇒ The operating cycle “*Fast rinse (R)*” starts.
11. Press ↻.
 - ⇒ The operating cycle “*Operation (S)*” starts.
Recharge runs correctly.

10.6 Checking the salt reservoir

Checking for integrity

- A Salt reservoir lid
- B Rod
- C 3 - 5 cm distance from the edge of the salt reservoir
- D Marking

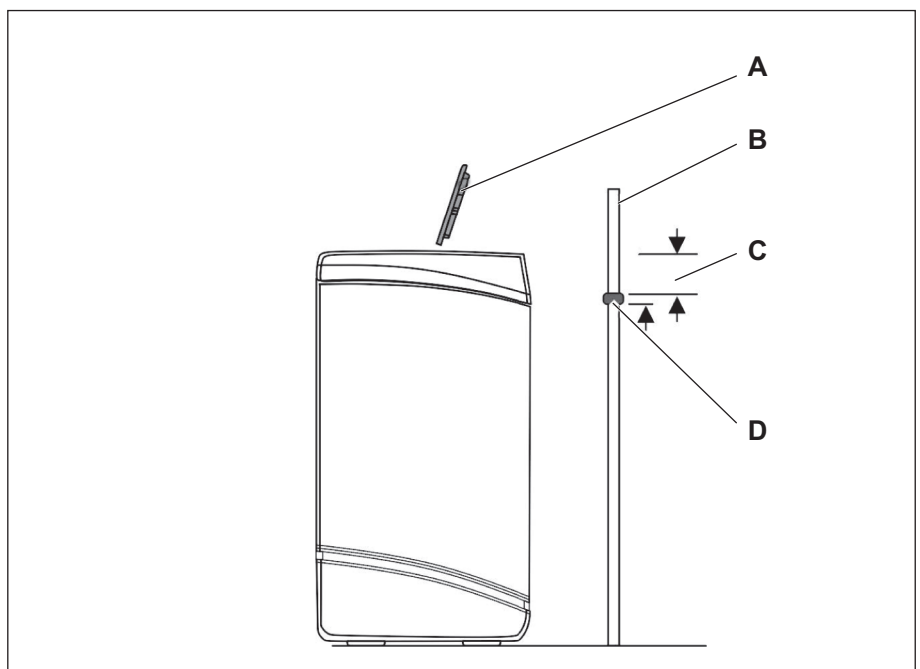


Fig. 16: Mark the reservoir height

1. Visually check the exterior of the salt reservoir for integrity.
2. Take off the salt reservoir lid (A) in an upwards direction.
3. Position the hygienically clean rod (B) vertically on the outside next to the salt reservoir.
4. Apply a marking (D) about 3 – 5 cm (C) below the edge of the reservoir on the rod (B).
 - ⇒ The marking indicates how high the salt reservoir could be filled to its maximum.

5. Position the rod (B) vertically in the salt reservoir.



A salt bridge is present when noticeable resistance is felt before the mark (D) on the wooden rod reaches the edge of the salt reservoir.

If a salt bridge is present: Break the salt bridge

- A Rod
- B Salt bridge

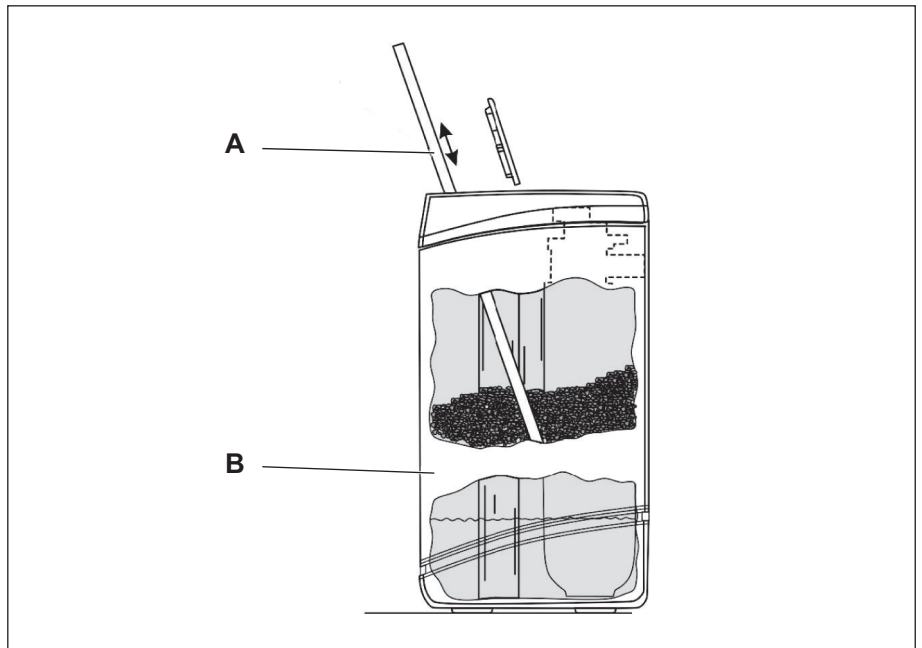


Fig. 17: Breaking salt bridges

NOTE!

Salt reservoir damage caused by external knocks!

- ▶ Do not apply force to the container from the outside or hit it with other objects.
- ▶ If a salt bridge is present: Carefully press on the salt bridge (B) in several places using the hygienic rod (A).
- ⇒ The salt bridge will break off.

If the salt reservoir is not half full: Add salt tablets

NOTE!
<p>Property damage due to incorrect salt selection!</p> <p>If unapproved salt tablets are used, there is a danger of property damage and malfunctions.</p> <p>▶ Only use salt qualities corresponding to DIN EN 973 Type A.</p>

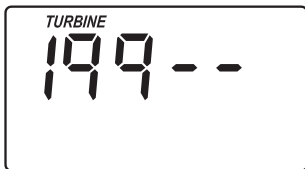
1. Fill the salt reservoir to half the container height with approved salt tablets (corresponding to DIN EN 973 Type A).
2. Position the salt reservoir lid.

10.7 Testing the turbine meter

By testing the turbine meter, the turbine, turbine sensor and water flow can be checked.



1. Press and hold **OK** for 3 seconds until "000 --" is displayed.



2. Open a water tap downstream of the water softener.



<p>Value range</p> <ul style="list-style-type: none"> • 000 No water flow detected through the flowmeter. • 1 – 199 The flowmeter meters from 1 - 199 per measured gallon of water (3.78 litres).
--

11 Operating data

Specification	Unit	LEYCOsoft Pro 9	LEYCOsoft Pro 15	
-	-	Certification according to DVGW	Certification according to DVGW	
Model code	-	dA9	dA15	
Rated capacity according to DIN EN 14743	mol	3.1	7.5	9.0
Maximum salt use per recharge	kg	0.66	1.5	2.0
Wastewater volume during recharging	l	98.6	160	165
Rated flow according to DIN EN 14743	m ³ /h	0.9	1.2	
Pressure drop at rated flow	bar	0.3	0.6	
Flow for a pressure drop of 1 bar	m ³ /h	2.0	1.8	
Resin volume	l	8.9	14.16	
Operating temperature	°C	5 – 25		
Operating pressure	bar	1.4 – 8.5		
Electrical connection	Volt	240/24		
	Volt-ampere	50		
	Hertz	50		
Power consumption	Watt	11.5		
Operating weight	kg	46	70	

12 Spare parts

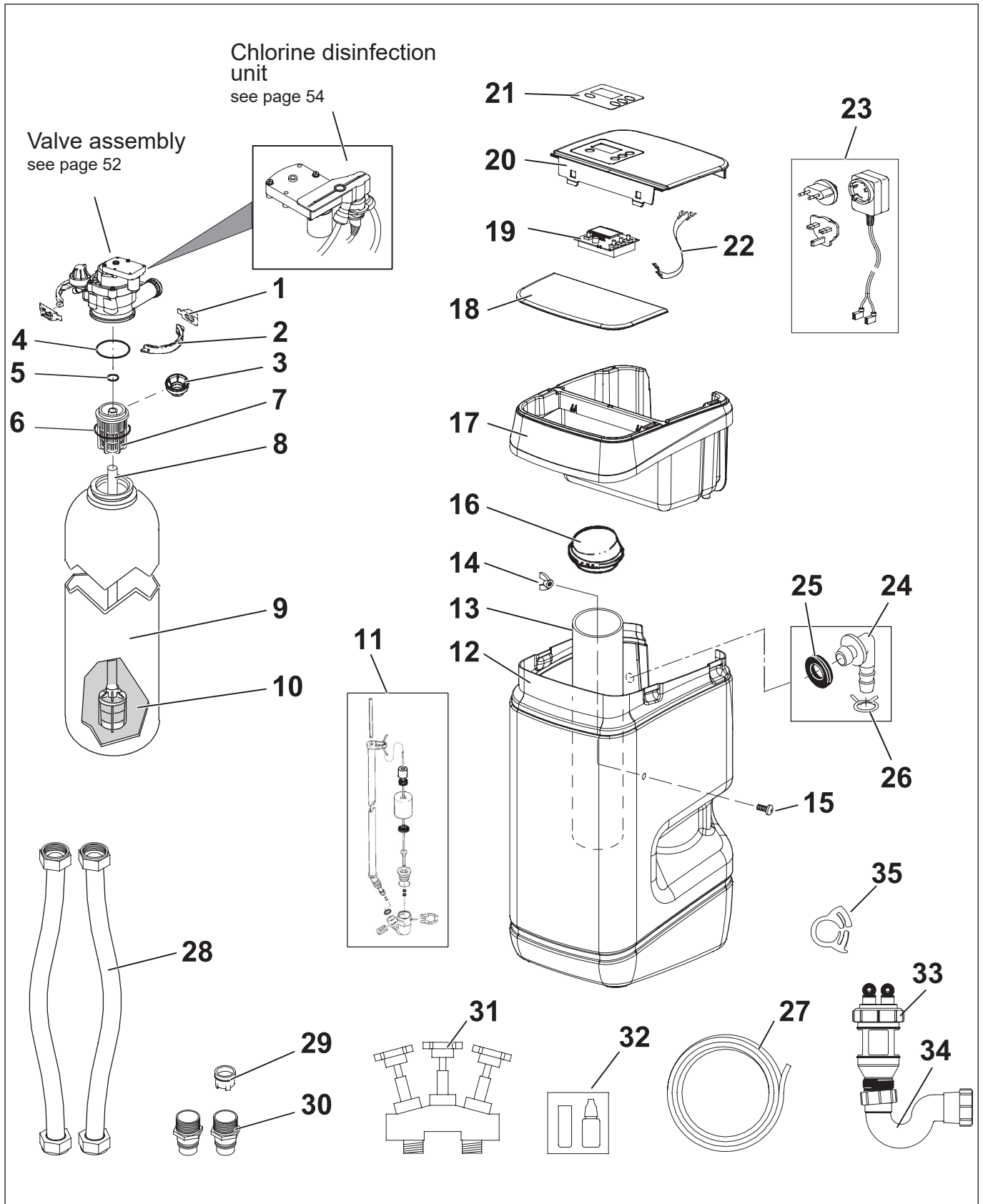


Fig. 18: Water softener

Item	Part no.	Description
-	7331177	Container control head fastening set (items 1 & 2)
1	↑	Bracket (2x)
2	↑	Clamp (2x)
3	7265025	Filter sieve, only for LEYCOsoft Pro 9
-	7112963	Filter O-ring set (items 4-6)
4	↑	O-ring, 73.0 mm x 82.6 mm
5	↑	O-ring, 20.6 mm x 27.0 mm
6	↑	O-ring, 69.9 mm x 76.2 mm
7	7088855	Upper distribution nozzle, only for LEYCOsoft Pro 9
	7077870	Upper distribution nozzle, only for LEYCOsoft Pro 15
8	7105047	Distribution tube with lower distribution nozzle
9	7268950	Resin tank, 22.9 cm x 35.6 cm, for LEYCOsoft Pro 9
	7264037	Resin tank, 20.3 cm x 63.5 cm, for LEYCOsoft Pro 15
10	304737	Ion exchanger in 25-litre sack
11	7344007	Brine valve assembly for LEYCOsoft Pro 9
	7342835	Brine valve assembly for LEYCOsoft Pro 15
12	7343938	Salt reservoir for LEYCOsoft Pro 9
	7344633	Salt reservoir for LEYCOsoft Pro 15
13	7267035	Brine valve protection tube for LEYCOsoft Pro 9
	7350024	Brine valve protection tube for LEYCOsoft Pro 15
-	7331981	Assembly equipment for brine valve protection tube
14	↑	Wing nut
15	↑	Screw
16	7155115	Cover cap for brine valve protection tube
17	7305079	Container add-on
18	7309984	Salt reservoir lid
19	7387712	Electronic controller / printed circuit board
20	7387649	Cover for brine container / control panel
21	7387762	Protective cover for control panel
22	7250826	Power cable
23	7337490	Mains plug for power supply, 24 V DC
-	7331258	Overflow connection set (items 24-26)
24	↑	Connection angle
25	↑	Sealing grommet
26	↑	Hose clamp
27	7139999	Drain hose for wastewater and overflow prevention, 6.00 metres
	7335113	Drain hose for wastewater and overflow prevention, 3.66 metres
28	1198	Flexible armoured hose
29	1199	Check valve
30	10224.010.2	Brass connection-adapter neutral (for outlet)
	1399	Brass connection-adapter with "IN" marking (for inlet)
31	1423	Brass bypass mixing valve
32	1421	Hardness measuring kit
33	1419	Wastewater connection 10-16 mm
34	1420	Siphon for wastewater connection
35	1455	Hose clip

Item	Part no.	Description
53	7337474	Motor mounting
54	7030713	Microswitch for cam gear
-	7331185	Wastewater connection set (items 55-59)
55	↑	Cotter pin
56	↑	Wastewater hose connection
57	↑	Hose clamp
58	↑	O-ring, 15.9 mm x 20.6 mm
59	↑	Flow limiter, 6.8 l/min
-	7129716	Seal set (items 60-65)
60	↑	O-ring, 11.1 mm x 15.9 mm
61	↑	O-ring, 19.1 mm x 23.8 mm
62	↑	O-ring, 85.7 mm x 92.1 mm
63	↑	Rotor seal
64	↑	O-ring, 9.5 mm x 14.3 mm
65	↑	Seal, injector connection
66	7082087	Shaft washer
67	7199232	Rotor disc including shaft
-	7342665	Discharge seal set, 3/4" (items 64, 68 & 69)
68	↑	Plug, discharge seal
69	↑	Spring
70	7337563	Safety clip for connection adapter (4x)
71	7337571	O-ring, 23.8 mm x 30.2 mm (4x)
-	7113040	Turbine water meter set
72	↑	Turbine wheel mounting and pin
73	↑	Turbine
74	7082053	Control head body lower part
75	7081201	Cotter pin for connection with injector
76	7342649	O-ring, 6.4 mm x 9.5 mm (2x)
77	1202600	Nut for injector angle
78	7120526	Angle for injector
79	7292323	O-ring, 4.8 mm x 11.1 mm
80	7339183	Complete injector for LEYCOsoft Pro 9 (items 81-89)
	7268421	Complete injector for LEYCOsoft Pro 15 (items 81-89)
81	7081104	Injector housing
82	7095030	Small hopper sieve for injector
83	7084607	Flow limiting disc for brine addition, 0.57 l/min
84	7113024	Injector disc including seal
	7204362	Individual injector disc seal
85	7339191	Flow regulator 0.23 l/min for LEYCOsoft Pro 9
	521829	Flow regulator 0.38 l/min for LEYCOsoft Pro 15
86	7146043	Cap sieve
87	7167659	Cap sieve fastening frame
88	7170262	O-ring for injector cap, 28.6 mm x 34.9 mm
89	7199729	Injector cap
90	7309803	Sensor and connection cable for turbine meter
91	7337466	Control head cover
92	7342657	Screws for control head (5x)
-	7298549	Replacement set for venturi assembly (items 82, 84, 88 & 2x 76)

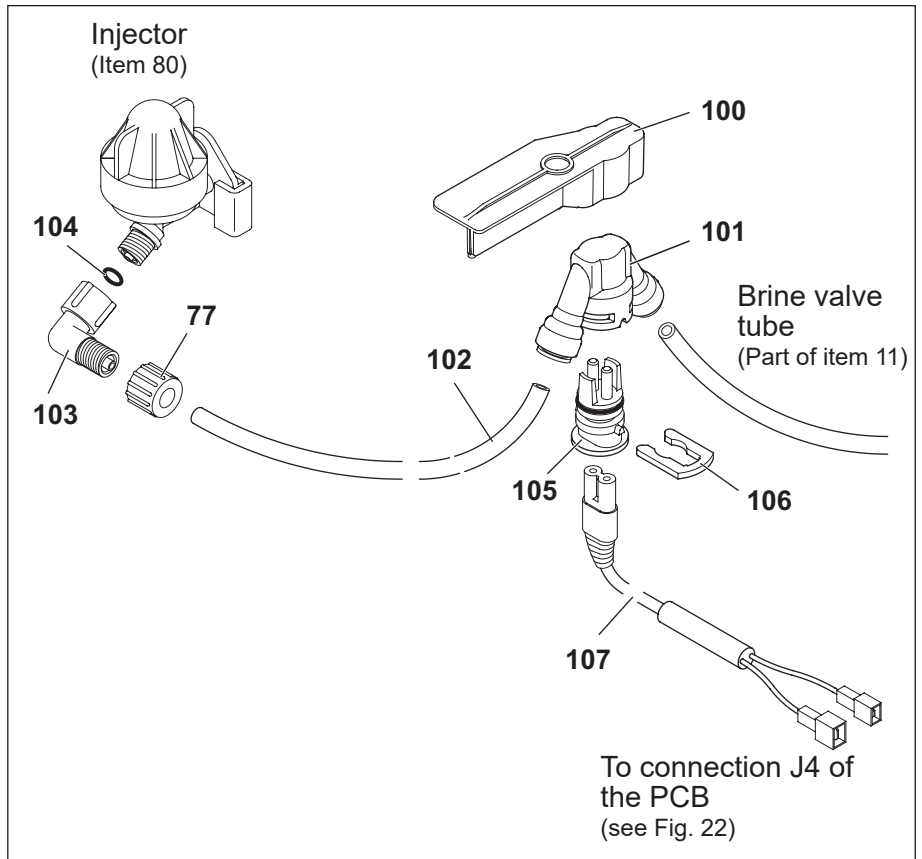


Fig. 20: Chlorine disinfection unit

Item	Part no.	Description
-	7335804	Chlorine disinfection unit complete set
100	↑	Chlorine disinfection unit mounting
101	↑	Chlorine disinfection unit housing
102	↑	Chlorine disinfection unit brine pipe
103	↑	Angle for injector
104	↑	O-ring, 4.8 mm x 11.1 mm
105	↑	Chlorine cell probe
106	7142942	Chlorine cell probe fastening clip
107	7323158	Connection cable, chlorine disinfection unit to printed circuit board
-	7335799	Chlorine disinfection unit (items 101, 105 & 106)

13 Appendix

A Conformity declaration

DECLARATION OF CONFORMITY EUROPEAN UNION EC DIRECTIVES



EcoWater manufactured water softeners, tank filters, central water filters, RO drinking water systems, remote monitors, and automatic sediment filters.

Application of Council Directive(s) declared as applicable:	2014/53/EU	Radio & Telecommunications Terminal Equipment (R&TTE)
	2014/35/EU	Low Voltage Directive (LVD)
	2014/30/EU	Electromagnetic Compatibility (EMC)
	2014/68/EU	Pressure Equipment Directive (PED)
	2009/125/EC	Ecodesign Requirements for Energy Related Products (ERP Directive)
	2011/65/EU	(RoHS 2)
	Regulation (EC) No 1907/2006 (REACH)	

Standards to which Conformity is declared as applicable:	EN 61000-3-2: 2014
	EN 61000-3-3: 2013
	EN 55011: 2009/A1:2010
	EN 55014-1: 2006/A2:2011
	EN 55014-2: 2015
	EN 55024: 2010 + A1: 2015
	EN 55032: 2015
	EN 300 220-1 V2.1.1
	EN 300 220-2 V2.1.2
	EN 301 489-3 V1.4.1
	EN 61000-6-2: 2005
	EN 62233: 2008/EN50366: 2003 + A1: 2006
	EN 60335-1: 2012 + A11: 2014 + A13: 2017 + A1: 2019 + A2: 2019 + A14: 2019
	EN 60335-2-29: 2004 + A2: 2010 + A11: 2018
	EN 62368-1: 2014 + A11: 2017

Manufacturer's Name: EcoWater Systems LLC
 Manufacturer's Address: 1890 Woodlane Drive
 Woodbury, MN 55125 USA

Importer's Name: EcoWater Systems Germany GmbH
 Importer's Address: Urbastrasse 134
 70190 Stuttgart, Germany

Type of Equipment: See Shipper's Export Declaration

Year of Manufacture: 2021

I, the undersigned, hereby declare that the equipment specified above conforms to the above directives and standards.

Place: Stuttgart, Germany _____

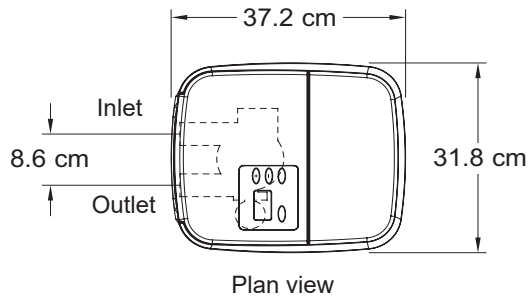
 (Signature)

Date: 5-13-21 _____

 (Name)

 (Position)

B Dimensions



Model	Nominal resin tank size	Dimensions A	Dimensions B
D9	22.9 x 35.6 cm	54.8 cm	41.0 cm
D15	20.3 x 63.5 cm	83.5 cm	69.7 cm

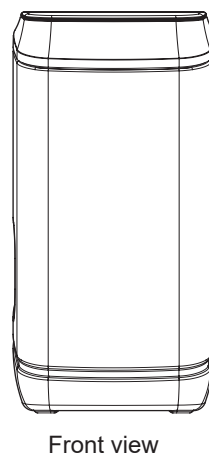
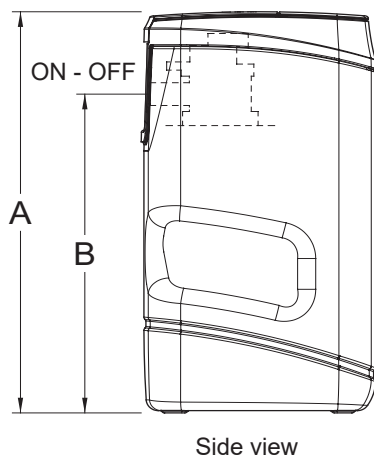


Fig. 21: Dimensions

C Circuit board

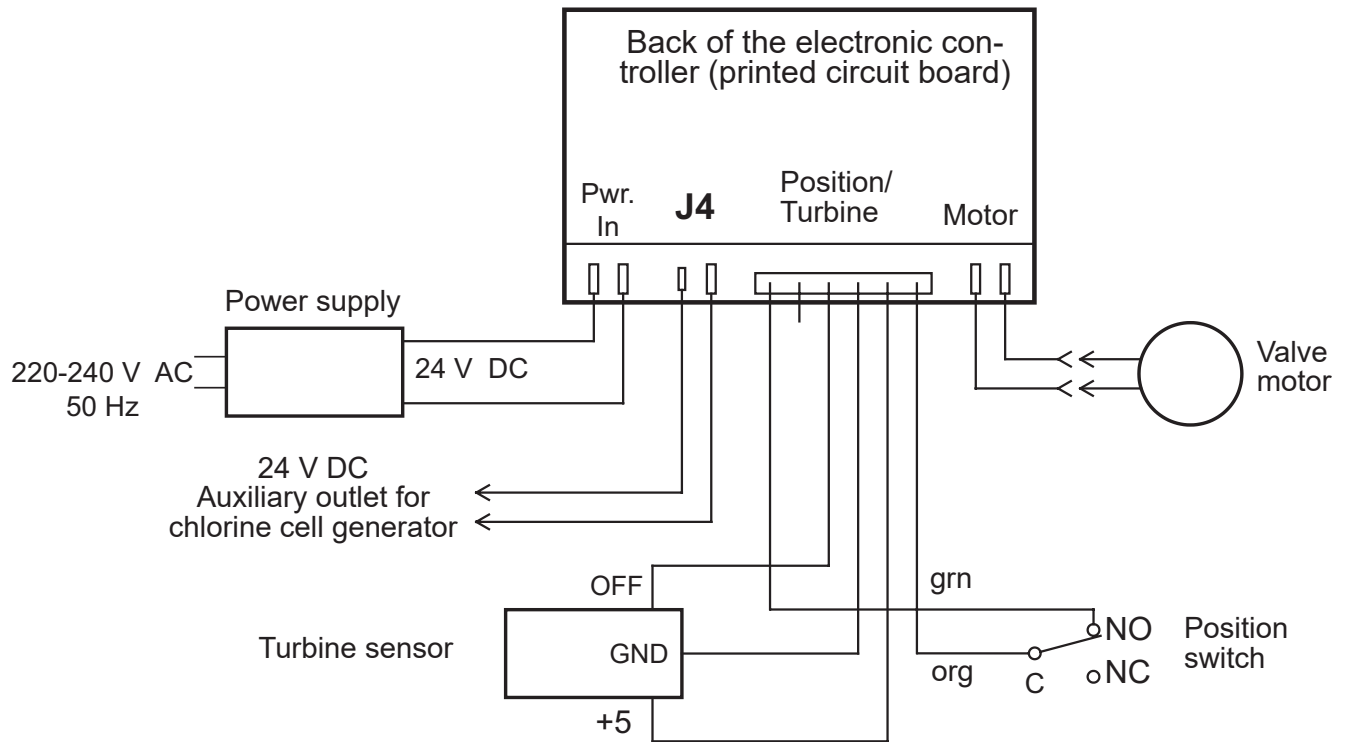


Fig. 22: Printed circuit board



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