

MANUAL

Use and Maintenance

LEX 1500 Connect Water Softening Systems



Haustechnik mit System



Read attentively prior to start-up.

Should these instructions not answer all your questions, please contact the manufacturer SYR first.

Competent assistance for all technical questions on our products, under

SYR service
+49 2161 6105-0

Hans Sasserath GmbH & Co. KG

Safety and regulating valves
Muehlenstrasse 62, D-41352 Korschenbroich
Postfach 1151, D-41352 Korschenbroich
Phone +49 2161 61 05 - 0
Fax +49 2161 61 05 - 20
e-Mail export@syr.de

www.syr.de

© Hans Sasserath GmbH & Co. KG

The company Hans Sasserath GmbH & Co. KG remains the owner of the copyright of the present instructions manual. No part of this publication may be reproduced, transmitted in any form or by any means or used for competitive ends without prior permission of the author.

Table of contents

1	Safety instructions	4
1.1	Symbols	4
1.2	General safety instructions	4
1.3	Safety instructions - Electricity	4
1.4	Safety instructions - Salt	4
1.5	Safety instructions - Temperature	4
2	Foreword	5
3	How the system works	6
4	Installation site requirements	7
5	Use	8
5.1	Menu level 1	8
5.2	Menu tree Menu level 1	9
5.3	Menu level 2	10
5.4	Menu tree Menu level 2	11
6	Service / Service interruption	12
6.1	Service	12
6.2	Service interruption	12
7	Operation / Maintenance / Inspection	13
7.1	Operation	13
7.2	Maintenance / Intervals	15
7.2.1	Check / Cleaning - Strainer	16
7.2.2	Cleaning - Salt tank	16
7.2.3	Check / Exchange - Optical glass	17
7.2.4	Check / Cleaning - Chlorinator cell	17
7.2.5	Check / Cleaning - Injector	18
7.2.6	Restart	18
8	Malfunctions	19
8.1	Troubleshooting - LEX 1500 Connect	19
8.2	Troubleshooting - Water softener	21
9	Warranty	23
10	Technical specifications	24
10.1	LEX 1500 Connect Single Water Softener	24
10.2	LEX 1500 Connect Double Water Softener	25
10.3	LEX 1500 Connect Alternating Water Softening System	26
10.4	LEX T 1500 Connect Triple Water Softener	27
11	Dimensions and spare parts	28
11.1	LEX 1500 Connect Single Water Softener	28
11.2	LEX 1500 Connect Double Water Softener	30
11.3	LEX 1500 Connect Alternating Water Softening System	32
11.4	LEX T 1500 Connect Triple Water Softener	34
12	Maintenance report	36

1. Safety instructions

1.1 Symbols



Danger to life and limb! Caution!



**Important instruction regarding the correct operation of the device.
Observe strictly!**

1.2 General safety instructions

Use only original spare parts and accessories that have been tested and approved by the manufacturer. The manufacturer is not liable for damages caused by the use of non-original spare parts and accessories or improper handling. Should these instructions not answer all your questions, please contact the manufacturer first.

1.3 Safety instructions - Electricity

An electric shock can be lethal or cause serious injuries; any non-authorized work on the electric system is strictly forbidden



Prior to cleaning works on the device or close to it, always unplug the apparatus as water and current form a lethal mixture!



Only qualified installers are authorized to install the device.

Ensure that the socket is always readily accessible. If the cable of the device is damaged, replace it in order to avoid any risk. Unplug the device prior to changing any setting in the electronic system. The apparatus is delivered with a mains adapter.

1.4 Safety instructions - Salt

The residual regeneration salt will be flushed out of the regeneration tank along with the waste water, which should not be used for watering flowers or similar purposes. Observe the instructions in chapter „Installation site requirements“ to ensure perfect safety when draining the waste water and the salt.



The indicated salt quantities refer to salt tablets. When using industrial salt (salt pellets or blocks) quantities may vary.

1.5 Safety instructions - Temperature



Danger of scalding! Load resistances may become hot in operation and should not be touched.

Vent the water softening system right after the connection to the water mains to ensure perfect safety.

2. Foreword

To the customers' attention!

you made a very good decision in selecting this water softening system, as it stands for the latest developments in the water conditioning technology.

The SYR LEX 1500 Connect Water Softeners are designed to protect pipes and water heaters against scale deposits, which reduce the water flow through the pipes and lead to a high energy consumption. By protecting appliances and valves, the devices prevent expensive repair works.

There are no restrictions for the field of application according to DIN 1988.

The ion exchanger resin is located in a tank. The ion exchanger resin is regenerated in several cycles. The regeneration time is preset to 02.00 am. The control unit automatically adapts to the consumers' habits. The LEX 1500 Connect Single and Double Water Softeners do not provide softened water during regeneration.

Depending on the resin quantity (tank size), the water softener's capacity is designed to allow for the partial softening of both the total water in single/multi-family houses and specific water quantities used for hot water, swimming pools, washing machines and dish washers.

Synthetic pipes or other corrosion resistant pipes shall be installed in all cases, where water of 0 °dH (German hardness degree) flows through the pipes. Galvanized or copper tubes can also be used in case of partial softening (approximately 8 °dH). This stabilizes the remaining carbonate hardness particles and forms the prerequisite for building up a homogenous protective coating in the downstream piping system. Some particular cases require an additional dosage of minerals/mineral solutions.

The functional parts are made of high-quality materials, which all meet the local regulations and specifications.

Verify that the device shows no visible damages as soon as you receive it. In case of damage caused by transport, directly contact the forwarding agency.

The warranty does not cover damages caused by improper handling or operation.

Please refer to the terms of delivery and payment of your local dealer for any further or other claims.

To ensure trouble-free functionality, the regeneration salt used must comply with the requirements of the European Standard EN 973 (former DIN 19604 standard). We recommend Broxo or Solvay salt tablets.



We recommend to conclude a service contract to make sure that the perfect functionality of all water treatment devices is verified on a regular basis.

3. How the system works

The ion exchanger resin is made up of small synthetic resin beads, which replace the calcium ions causing water hardness with sodium ions.

The water becomes „soft“. However, the ion exchanger resin absorbs only a limited amount of hardness particles. Depending on the water hardness, the absorbing capacity of the resin becomes depleted sooner or later and has to be regenerated.

Regeneration with this system means removing the hardness particles from the ion exchanger resin.

The diluted salt brine that flows through the resin bed removes the hardness particles, which are then directed to the sewer.

The regeneration process requires only a small amount of salt and complies with EN 14743 and DIN 19636-100.

The water softening system undergoes automatic disinfection on a regular basis in order to prevent microbial growth. The small amount of chlorine required for that process is generated electrolytically from the brine sucked in during regeneration.

The regeneration is carried out automatically.

A water meter integrated in the device records the quantity of produced soft water, which is summed up in the electronic system. When the value set for the raw water hardness has been reached, the electronic system will trigger the required regeneration process.

4. Installation site requirements



Follow these instructions in order to prevent any problem with the LEX 1500 Connect Water Softener.

Install the water softener in a dry room, which is not liable to frost. The ambient temperature should not exceed 30 °C.

The system requires a power supply (230 V, 50 Hz) under constant voltage.

A gravity flow connection to the sewer for the waste water hose and the salt tank's safety overflow is also necessary.

The water softening system is usually installed downstream of the protecting filter, the pressure reducing valve (compulsory when the static pressure is equal to or exceeds 5.0 bar) and upstream of a dosing pump (optional).

To prevent huge damage on the installation site due to a leaking device or supply line (for instance in an office, medical practice etc.), it has to be ensured that during the personnel's absence the water and power supply are interrupted upstream of the system.

We recommend our leakage detector Safe-T Connect with an integrated floor sensor (serial number: 2421.00.010).

Do not disconnect during the regeneration process.

When restarting the device after a service interruption, repeat the same steps as for the initial start-up (cf. the relevant instructions for installation and start-up).

The water to be softened has to be clear, free of solid impurities as well as iron and manganese-free.

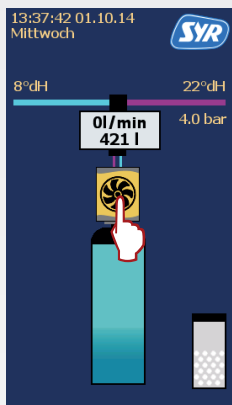
An additional water analysis may be helpful: we will be glad to offer you support with a free-of-charge water sample analysis. Send us your sample and contact us for further details.

5. Use

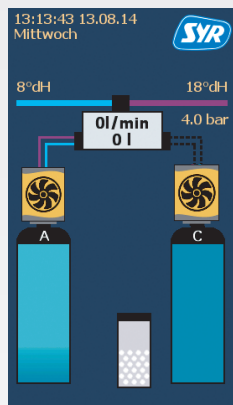
5.1 Menu level 1

The display is deactivated as a standard setting.

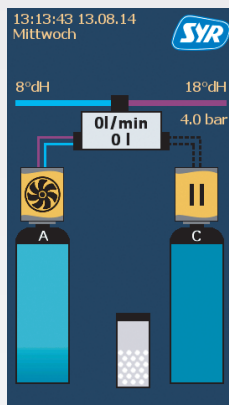
Simply touch the display to activate it. The start screen will be displayed.



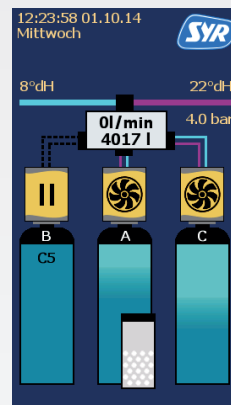
Start screen
LEX 1500 Connect
Single water softener



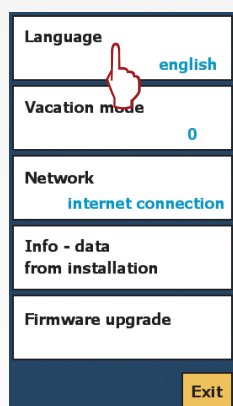
Start screen
LEX 1500 Connect
Double water softener



Start screen
LEX 1500 Connect
Alternating water softening
system



Start screen
Lex T 1500 Connect
Triple water softener



Main menu

Touch the display again to go to the main menu.

Basic settings for language, days of absence, network settings and software updates.



e.g. Submenu
language

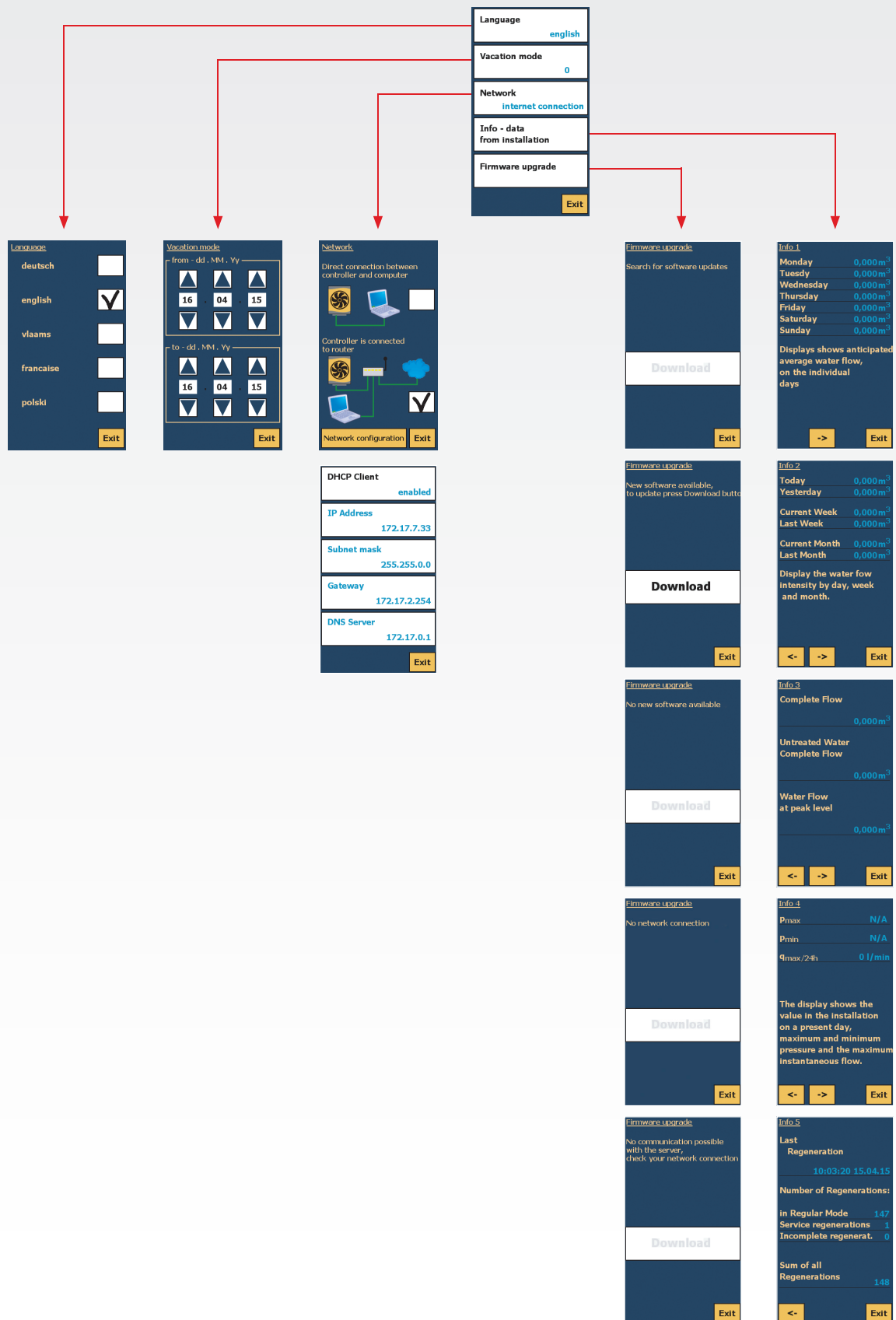
Touch the display again to go to the next submenu.

Press „Exit“ to confirm the setting and quit the menu.

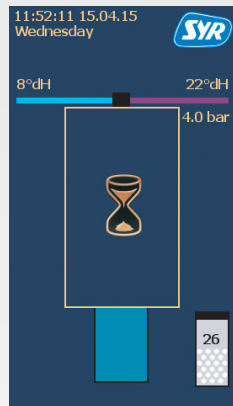
If submenus are available, press the arrow keys to navigate through these menus.

5.2 Menu tree - Menu level 1

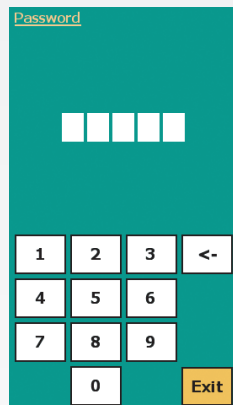
Touch the start screen to display the main menu.



5.3 Menu level 2



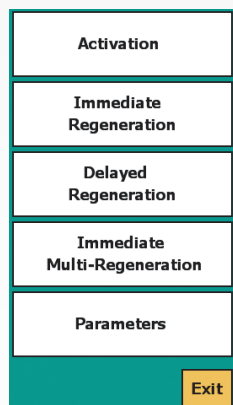
To go to menu 2: touch the display for about two seconds until the symbol of an hourglass appears.



You will be asked to enter the password.

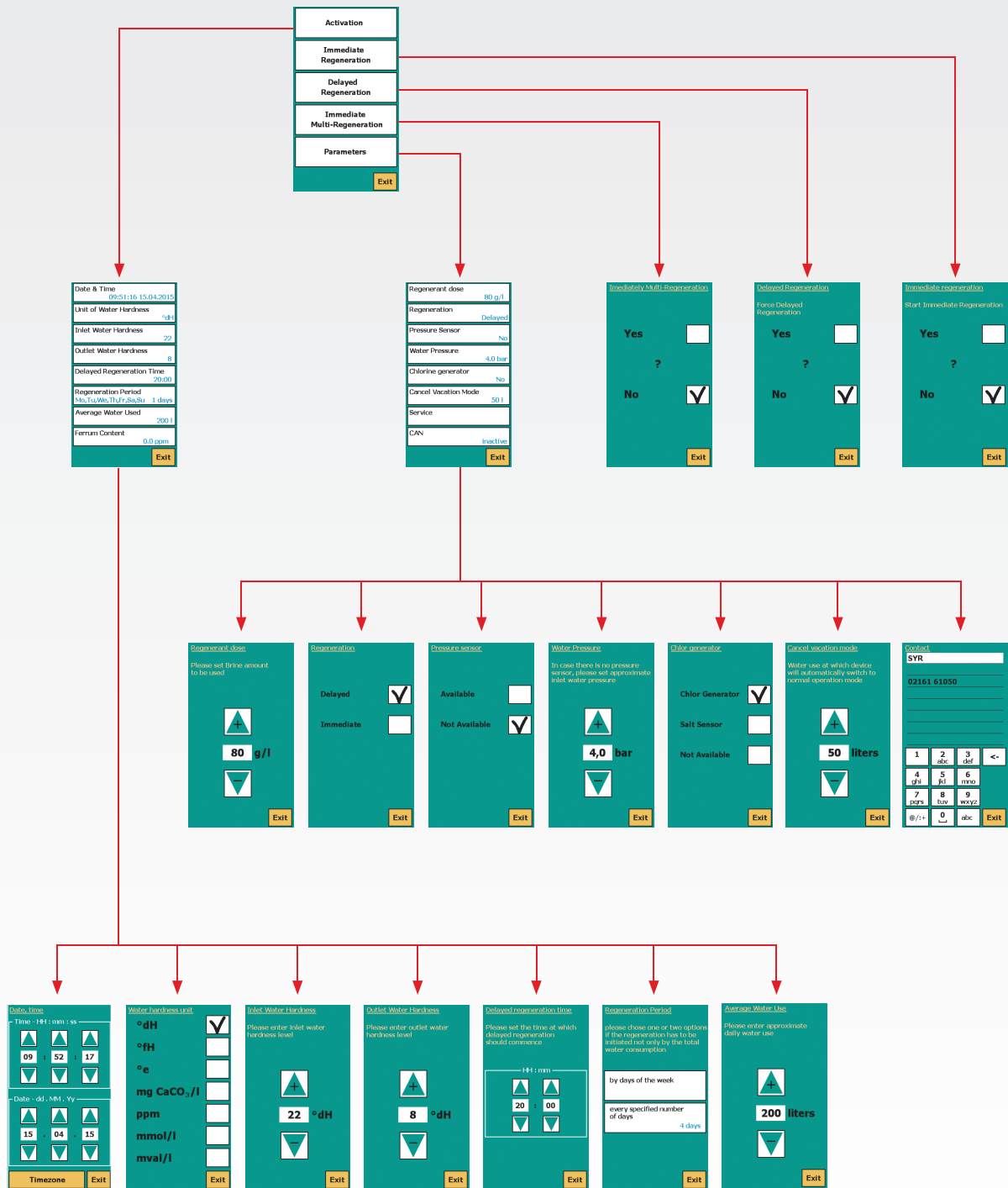
The password is: **41352**

You will be in the main menu of the menu level 2.



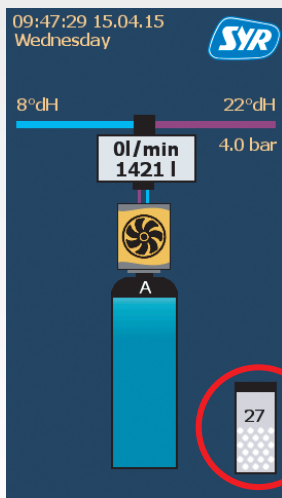
You can make the required settings for the start-up, trigger an immediate regeneration, program a later regeneration or set additional parameters in this level.

5.4 Menu tree - Menu level 2



6. Service / Service interruption

6.1 Service



Display:
salt tank full



Display:
salt tank empty

As the water softener works automatically, you have to refill salt from time to time only, but at the latest when the display signals that the salt level is low. The SYR Connect control indicates the number of weeks left until the salt stock has to be refilled.

The salt stock should not be reduced to the extent that the liquid level is above the salt, as otherwise it rises excessively when refilling salt. In this case, the SYR Connect control will signal a malfunction.

When using SYR Connect via Internet with the SYR App or the web interface of a PC, the SYR Connect control will indicate in due time that the salt level is too low.

When no softened water or just a little quantity of softened water is drawn off, the water softener will automatically carry out an additional regeneration every 4 days to ensure perfect hygiene (in compliance with EN 14743 and DIN 19636-100 (DVGW-test guideline)).

6.2 Service interruption

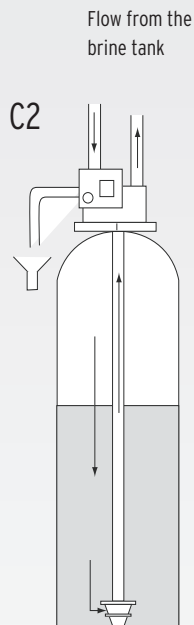
When restarting the water softener after a service interruption, repeat the same steps as for the initial start-up (cf. the relevant instructions for installation and start-up).



Should the main water supply of the water softener be interrupted (main shut-off valve closed or on „bypass“), the power supply of the device has to be disconnected as well.

7. Operation /Maintenance /Inspection

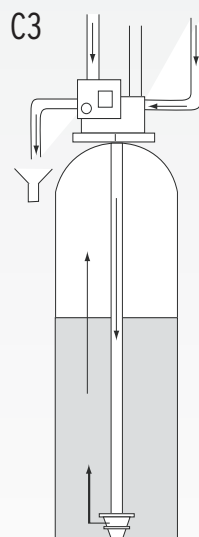
7.1 Operation



Brine preparation (display - pause1) - cycle C2:

The control unit fixes the time required for dissolving the salt in the water. During this period, the water softener works in normal mode - i.e. the water undergoes the normal softening process (the water flows normally through the device).

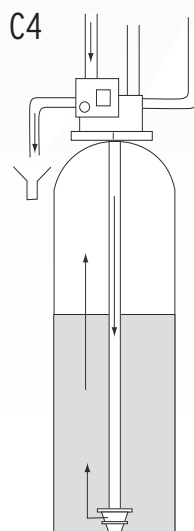
When the brine preparation time is over, the control unit places the cam in the C3 position.



Flushing with brine (flow upwards) - cycle C3:

The control unit directs the water through the injector and the brine is sucked in from the brine tank. Afterwards the brine is directed downwards through a vertical pipe and then upwards (countercurrent) through the resin layer to the sewer. The ions responsible for water hardness are replaced by sodium ions and are directed to the sewer.

The resin is regenerated during this brine absorption cycle. The cycle finishes automatically.



> No cam movement

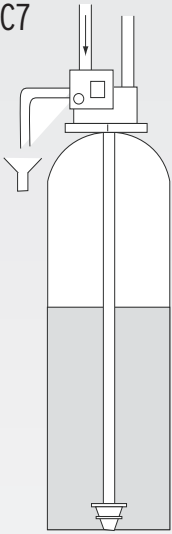
Slow flushing (flow upwards) - cycle C4:

The control unit directs the water through the injector. The water is slowly directed downwards through a vertical pipe, upwards through the resin layer and then to the sewer.

This is the final stage of the regeneration process with brine; the salt residues are flushed out of the resin layer. The brine is slowly flushed out of the resin layer.

The control unit goes through the positions C4 and C5 and puts the cam in the C6 position.

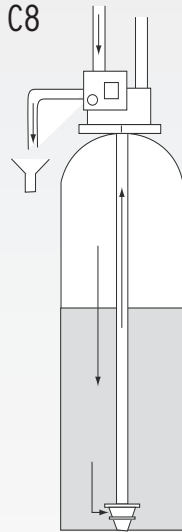
C7



Pressure balancing cycle (display pause 2) - cycle C7:

During this cycle, the valves close for a moment, which allows for the compensation of the hydraulic pressure in the resin layer - relief (water - air), so that the regeneration process can continue.

C8

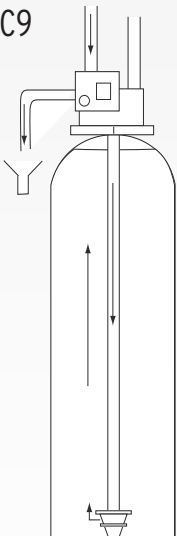


> The control unit puts the cam in C7 position.

Fast flushing 1 (flow downwards) - cycle C8:

The control unit directs the water through the resin layer downwards and through a vertical pipe upwards to the sewer. The brine residues are flushed out of the resin layer and directed to the sewer.

C9

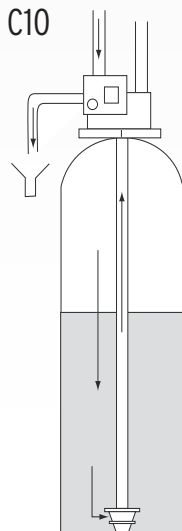


> The control unit puts the cam in C8 position.

Backwashing 1 (flow upwards) - cycle C9:

The control unit changes the direction of the water flow. The resin layer is flushed with water flowing from bottom to top. When backwashing, the resin layer is loosened up again and the residues are flushed out and directed to the sewer.

C10



> The control unit puts the cam in C9 position.

Fast flushing 2 (flow downwards) - cycle C10:

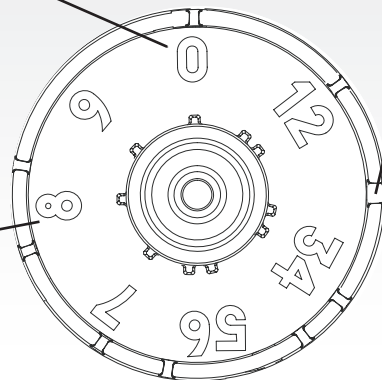
The control unit directs the water through the resin layer downwards and through a vertical pipe upwards to the sewer. The brine residues are flushed out of the resin layer and directed to the sewer. The control unit puts the cam in C0 position.

Cam position in the various cycles

Verify the cam position in the different cycles in the upper part of the cam.
In this case, it is cycle 0
Normal mode - Water softening

Extended opening means normal mode

Numbers on the circular display on the front cam disk



Position of the optical precision indicator

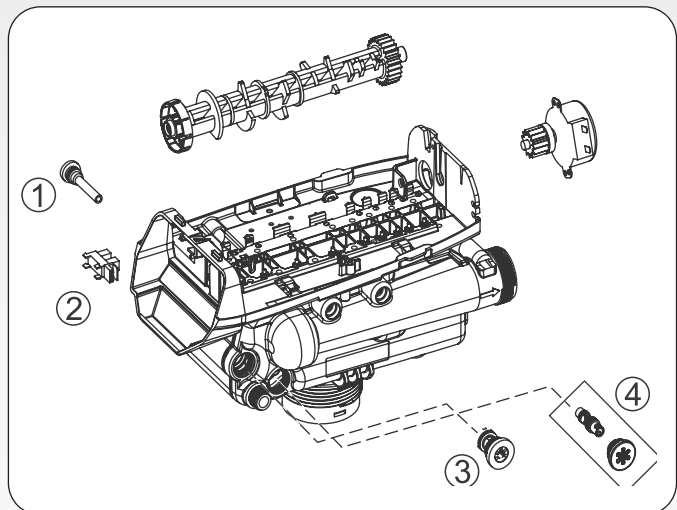


7.2 Maintenance / Intervals



Remove the cover(s) of the device, the cover(s) of the control head(s) and the cover of the salt tank(s) to service the device.

- ① Strainer
- ② Optical glass
- ③ Chlorinator cell
- ④ Injector



In order to ensure trouble-free and durable functionality, we recommend the maintenance set 1500.00.930 that includes the following:

- seal kit
- optical glass
- chlorinator cell
- strainer

The spare parts included in the maintenance set should be exchanged approximately every two years.

Maintenance	Interval	
Check hardness setting	every 3 months	Operator
Cleaning salt tank	once per year	Qualified installer
Cleaning chlorinator cell	once per year	Qualified installer
Exchange chlorinator cell	every 2 years	Qualified installer
Cleaning strainer	once per year	Qualified installer
Exchange strainer	every 2 years	Qualified installer
Cleaning injector	once per year	Qualified installer
Exchange injector	every 2 years	Qualified installer
Function test	once per year	Qualified installer

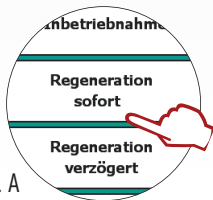
Prior to maintenance works on the LEX Connect 1500 alternating and triple water softening systems, observe the safety instruction below in bold print to ensure a continuous supply of softened water.



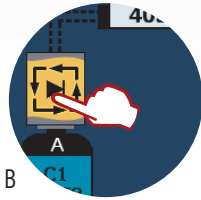
Disconnect the cable of the motor valve from the column in pause mode. The motor valve is already closed. Close the bypass valve of the column to be serviced. Observe the maintenance instructions 7.2.1 to 7.2.5.

In case of multiple- column systems, after having serviced the inactive column, first put the active column in the regeneration mode via the LEX Connect control (pict. A). Thus, the column already serviced will ensure the soft water supply while the column now in pause mode will be serviced. Start again with item 1. When using the LEX Connect triple water softeners, accelerate the regeneration by consecutively jumping to the various cycles (C1 to C10) by pressing the PLAY Key (pict. B) to end each cycle and jump to the next one (pict. B). The maintenance process described above will start now.

Once each column has been serviced, reconnect the cable of the motor valve to the control box and open the bypass valve.

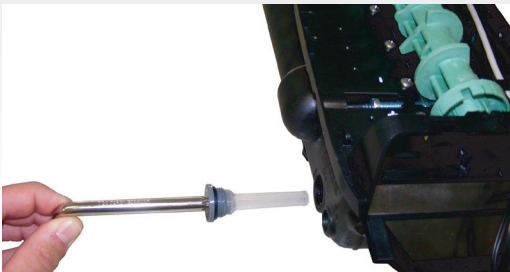


Pict. A



Pict. B

7.2.1 Check / Cleaning - Strainer



Use a Torx key (size T 50) to remove the strainer (1 - page 15).

Verify and if necessary clean the strainer and fit in again the control head. Should the strainer be damaged or too dirty, replace it.

7.2.2 Cleaning - Salt Tank



Disassemble the brine pipe in the salt tank: push- in the grey ring of the John-Guest angle with two fingers and use the other hand to remove the brine pipe.

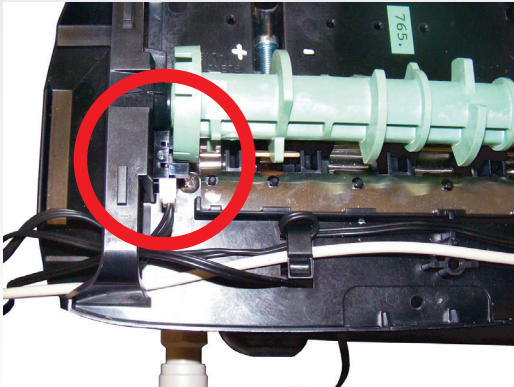
Verify the float and the check valve of the brine pipe - clean if necessary. Clean the salt tank and remove any incrustations and residues.

Remove the remaining salt from the salt tank and store it temporarily as hygienically as possible.

We recommend for instance a clean plastic container, disposable garbage bags, etc.

After cleaning, put the collected salt back in the tank.

7.2.3 Check / Exchange - Optical Glass



Verify that the optical glass is correctly seated (2 - page 15).

Should the error message „Valve mechanism inoperate“ be displayed, verify the optical glass and replace if necessary.

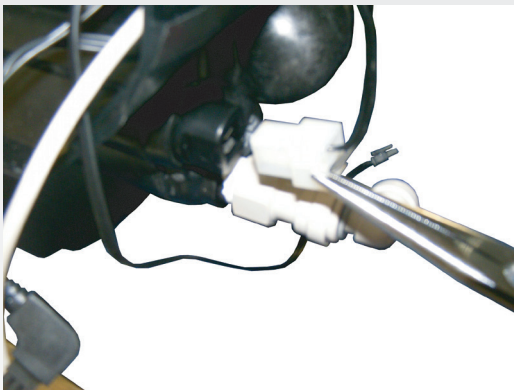
To start with, disassemble the actuator from the control head: remove the white safety bolt from the actuating motor's casing. Unscrew the actuator anticlockwise out of the bracket and pull backwards to remove.

Press the camshaft backwards and remove from the bracket with an upwards movement.

Remove the optical glass by unclipping carefully and replace if necessary.

Reassemble in reversed order.

7.2.4 Check / Cleaning - Chlorinator Cell



Use needle-nosed pliers to remove the chlorinator cell's contact plug properly.

(3 - page 15).



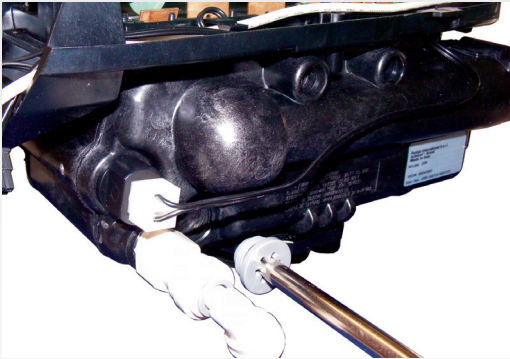
Use a spanner (size 19) to disassemble the chlorinator cell from the control head.



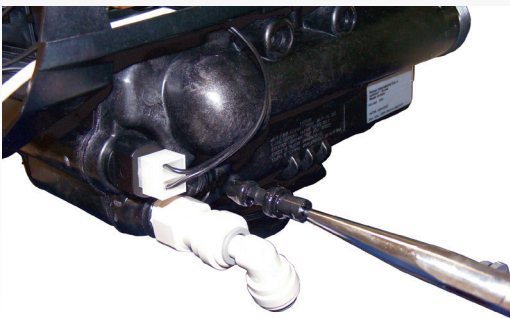
Clean the chlorinator cell's contact surfaces if necessary and use cold and clear water for rinsing until clean. If they are no longer intact, replace the chlorinator cell.

Reassemble in reverse order.

7.2.5 Check / Cleaning - Injector



Use a Torx key (T 50) to unscrew anticlockwise the injector's plug (4 - page 15) .



Use needle-nosed pliers to remove the injector from the control head's seat.

Clean the injector with clear and cold water.

Reassemble in reversed order.

7.2.6 Restart

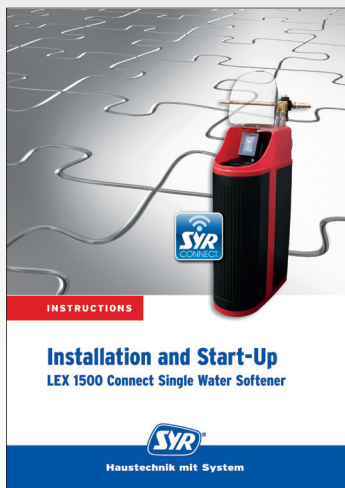


Fig.: Example LEX 1500 Connect Single Water Softener

For LEX 1500 Connect Single and Double Water Softeners: reopen the bypass valve(s), vent the pipe at a close draw-off point and re-plug.

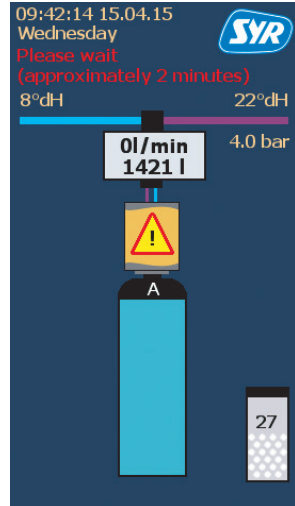
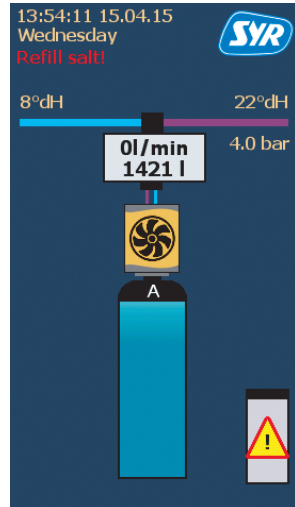
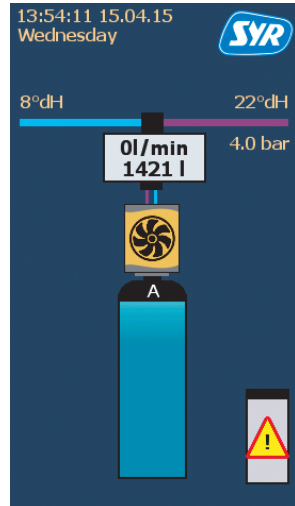
Restart the installation and observe the steps of the instructions „Installation and Start-Up“, chapter „Start-Up“.

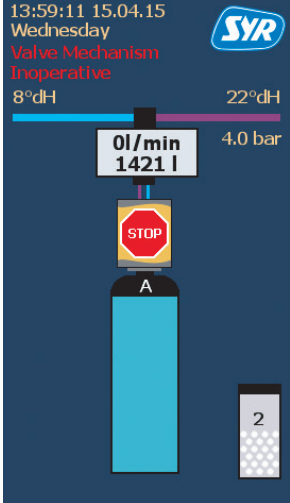
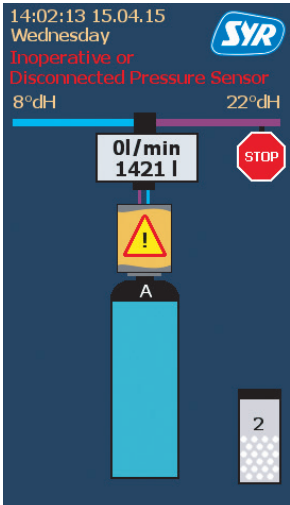
Verify the inlet water and blended water hardness and adjust the settings if required.

Record the maintenance works in the maintenance checklist (chapter 12).

8. Malfunctions

8.1 Troubleshooting - LEX 1500 Connect

Malfunktion	Description-cause	Remedy
 <p>09:42:14 15.04.15 Wednesday Please wait (approximately 2 minutes) 8°CdH 22°CdH 0l/min 1421 l 4.0 bar</p>	<p>The control unit puts the cam in the starting position - Normal mode.</p>	<p>Wait until the time required is over.</p>
 <p>13:54:11 15.04.15 Wednesday Refill salt! 8°CdH 22°CdH 0l/min 1421 l 4.0 bar</p>	<p>The salt quantity in the brine tank is too low.</p>	<p>Check the salt in the brine tank. Fill salt into the tank if necessary and start a manual regeneration</p> <p>Verify the brine pipe.</p> <p>Check whether the water softener's shut off valves are open.</p>
 <p>13:54:11 15.04.15 Wednesday 8°CdH 22°CdH 0l/min 1421 l 4.0 bar</p>	<p>The concentration of the regeneration product (salt brine) is too low.</p> <p>The value of 150 mA has not been reached during a time measurement of 1 minute.</p>	<p>Verify the leak-tightness of the brine pipe's connections.</p> <p>Check whether the chlorinator cell has to be cleaned.</p> <p>Check whether the injector is dirty.</p>

Malfunktion	Description-cause	Remedy
	<p>The control unit has not been able to put the cams in the correct starting position after the predetermined time.</p>	<p>Check the motor connection.</p> <p>Check the connecting pipe between the control unit and the motor.</p> <p>Check the connection and position of the optical precision indicator.</p> <p>Check whether the motor transmission is stuck due to a blockage of the cam drive's transmission. If everything is connected, observe the following order and check:</p> <ul style="list-style-type: none"> - the pipes, - the motor, - the optical precision indicator, - the control unit <p>If necessary, exchange the faulty components.</p>
	<p>The pressure sensor is not installed.</p> <p>Faulty pressure sensor.</p>	<p>Check whether the pressure sensor is installed if the pressure sensor symbol is activated (software)</p> <p>Verify the pressure sensor or exchange (contact the manufacturer).</p>

8.2 Troubleshooting – Water Softener

Malfunction	Probable cause	Remedy
Water softener produces hard water (no treated water downstream of the softener)	No salt or insufficient salt quantity in the tank.	Fill salt into the tank and start a manual regeneration.
	Salt quantity not sufficient for this water hardness or the amount of consumed water.	Contact the manufacturer.
	No regeneration	Check the power supply.
	Injector or strainer dirty or clogged.	Clean the injector or the strainer.
	The brine tank's stop valve closed or opened too early. Bypass has been opened.	Start „Brine draw/slow flushing“ for a moment. Repair or exchange the stop valve in the brine tank (contact the manufacturer).
Water not softened after regeneration.	Incorrect regeneration.	Refill salt and repeat the regeneration process.
	Leakage from the bypass valve.	Close or exchange the bypass valve (contact the manufacturer).
	Damaged O-ring at the vertical pipe in the resin tank.	Replace the seal (contact the manufacturer).
Water not softened in operation.	Incorrect capacity (softener capacity).	Check the salt quantity filled in and the system capacity (contact the manufacturer).
	Incorrect regeneration.	Check whether the salt solution is ready for use. Repeat the regeneration process.
	Leakage from the bypass valve	Contact the manufacturer
No power supply	Damaged vertical pipe.	Contact the manufacturer.
	The power plug is not connected.	Plug in. Connect the power supply.
The water softener does not regenerate.	Faulty control module.	Find the electric fault (contact the manufacturer).
	The device is disconnected.	Connect the power plug to the control module.
The water softener regenerates at the wrong time.	Faulty control module.	Contact the manufacturer.
	Faulty drive motor.	Replace the motor (contact the manufacturer).
The water softener does not absorb any salt.	Wrong time setting.	Set the correct time - Chapter „Time setting/Setting of the regeneration time“.
	Water pressure too low.	Increase the water pressure.
	Clogged drain pipe.	Clean/exchange the drain pipe.
	Clogged injector or strainer.	Clean the injector and the filter.
	Faulty injector.	Exchange the injector (contact the manufacturer).
	Stop valve 3 and/or 5 is not closed.	Turn the cam manually to flush out dirt. Put the system in the filling position for a moment.
No brine draw	The brine tank's stop valve closed or opened too early.	Start „Brine draw/slow flushing“ for a moment. Repair or exchange the stop valve in the brine tank (contact the manufacturer).
	Water pressure too low.	Set the water pressure as described in the instructions manual.
	Clogged drain pipe.	Clean the drain pipe.
	Dirty injector.	Clean the injector and the filter.
	Clogged injector or strainer.	Exchange the injector (contact the manufacturer).
	Flap valves 2 and 3 are not closed.	Eliminate the cause for the blockage of the flap valves. Hold manually and check or exchange the valves (contact the manufacturer).
The brine suction takes place at irregular intervals or is interrupted.	The brine tank's stop valve closed or opened too early.	Start „Brine draw“ for a moment. Repair or exchange the stop valve in the brine tank (contact the manufacturer).
	Water pressure too low.	Increase the water pressure.
Overfilled brine tank.	Damaged injector.	Exchange the injector (contact the manufacturer).
	Dirt in the valve reduces the flow rate.	Remove and clean the brine regulator. Start „Brine draw/slow flushing“ to clean the valve (start „fast flushing“ to remove any residual regeneration products from the tank)

Malfunction	Probable cause	Remedy
Overfilled brine tank.	The brine control valve is open.	Turn the cam manually to flush out the dirt. Leave the valve open.
	The stop valve 3 and/or 5 is not closed during the brine cycle, which leads to dirty salt.	Turn the cam manually to flush out the dirt. Leave the valve open.
	The suction pipe connection at the stop valve in the brine tank is permeable to air.	Check whether the suction pipe connection is airtight. Repair, if necessary.
Overfilled brine tank.	Flow rate too high when filling the tank.	Remove and clean the brine regulator (ball and seat).
	Flap valve 1 of the salt control valve is not fully closed due to dirt.	Start the valve drive manually to eliminate the dirt (flush out).
	Flap valve 5 of the salt control valve is not fully closed when brine is drawn - which causes the tank to be continuously refilled.	Start the valve drive manually to eliminate and flush out the dirt.
	Air gap/leak in the connecting pipe between the brine tank and the control chamber.	Check the tightness of all pipes and connections. Follow the manual's instructions.
	The injector's flow rate is reduced.	Clean or replace the injector.
	Clogged injector due to dirt or resin.	Clean the injector.
Hard water before the next regeneration is due.	Incorrect volume setting or use of wrong salt.	Contact the manufacturer.
Overspilling drain	Clogged drain due to dirt.	Check whether the drain is clogged or damaged.
After regeneration water runs or drips out of the drain or brine pipe.	The drain valve remains open (2, 6 or 7) due to dirt.	Turn the cam manually to flush out the dirt (remove the motor first).
	Spring too weak to close the valve.	Exchange the spring (contact the manufacturer).
	Blocked valve due to dirt.	Clean the valve.
Regeneration not at the right time.	Incorrect control settings.	Set the correct regeneration time according to the instructions.
No treated water between the regenerations.	Incorrect regeneration.	Repeat the regeneration; ensure that the correct salt quantity has been used.
	Incorrect setting of the salt quantity.	Set the correct salt quantity in the control. (80g/l of resin).
	Incorrect setting for water hardness or resin volume.	Set the correct values -cf. separate instructions "Installation and Start-Up".
	The inlet water hardness has changed.	Enter the right water hardness - cf. separate instructions "Installation and Start-Up".
	Dirt blocks the turbine's operation at the water meter.	Disassemble the water meter, remove the turbine and clean with clean water - it shall turn freely; if it is not the case, replace the meter (contact the manufacturer).
The water flow is not indicated in the display when water is drawn (Limex IQ control).	Bypass closed in the „Bypass“ position	Set the valve correctly.
	The water meter's sensor is not or not correctly connected.	Connect the sensor correctly to the water meter.
	Dirt blocks the turbine's operation at the water meter.	Disassemble the water meter, remove the turbine and clean with clean water - it shall turn freely; if it is not the case, replace the water meter (contact the manufacturer).
Flow rate too low/too high when backwashing or cleaning.	Wrong flow rate regulator.	Install the correct flow rate regulator (contact the manufacturer).
	Dirty valve.	Remove and clean the flow rate regulator (ball and seat).

9. Warranty

According to DIN EN 806, part 5, the operator has to make an inspection at least every two months. Warranty claims may not apply if this inspection interval has not been observed.

Servicing by the manufacturer or qualified installers is also required at least once a year and in case of multi-family houses twice a year.

We recommend concluding a service contract to ensure best functionality, also beyond the warranty period.

Make sure that qualified installers or the manufacturer's customer service regularly carry out maintenance works and provide the necessary consumables or wear-out parts etc.

The warranty period lasts 24 months as of the date of installation.

We commit ourselves to repair or replace as quickly as possible all parts that become unserviceable during the warranty period as a result of verifiably bad materials, a defective construction or a faulty model.

Our highest objective is to manufacture high-quality products.

Should you be faced with a problem, for which no solution is proposed in this instructions manual, contact us. We will be glad to help you.

Always indicate the model and the serial number of the device.

Postal address:
Hans Sasserath GmbH & Co. KG
Muehlenstrasse 62
D-41352 Korschenbroich

Phone +49 2161 6105 - 0
Fax +49 2161 6105 - 20
E-Mail export@syr.de

www.syr.de



10. Technical specifications

10.1 LEX 1500 Connect Single Water Softener

Technical specifications

Nominal flow rate	LEX 10	LEX 20	LEX 30
	2.1 m ³ /h	2.5 m ³ /h	2.8 m ³ /h
Nominal capacity	LEX 10	LEX 20	LEX 30
	4.1 mol	4.1 mol	4.7 mol
Nominal pressure	PN 10		
Minimum service pressure	2 bar		
Max. admissible service overpressure	8.0 bar (the central installation of a pressure reducing valve is compulsory when the static pressure is > 5.0 bar)		
Operating temperature	min. 5 °C, max. 30 °C		
Ambient temperature	min. 5 °C, max. 40 °C		
Pressure loss at nominal flow rate	1.0 bar		
Salt stock	LEX 10	LEX 20	LEX 30
	25 kg	60 kg	60 kg
Power supply	12V / 50Hz / 6W		
Device supply	12V DC		
Salt consumption per regeneration	LEX 10	LEX 20	LEX 30
	0.8 kg	1.6 kg	2.4 kg
Flushing water quantity	LEX 10	LEX 20	LEX 30
	47 l	155 l	155 l
Regeneration time	LEX 10	LEX 20	LEX 30
	124 min.	126 min.	125 min.
Volume of the exchanger resin	LEX 10	LEX 20	LEX 30
	20 m ³ x °dH	40 m ³ x °dH	60 m ³ x °dH

10.2 LEX 1500 Connect Double Water Softener

Technical specifications

Nominal flow rate	LEX 10 4.2 m ³ /h	LEX 20 5.0 m ³ /h	LEX 30 5.6 m ³ /h
Nominal capacity	LEX 10 4.1 mol	LEX 20 4.1 mol	LEX 30 4.1 mol
Nominal pressure	PN 10		
Minimum service pressure	2 bar		
Max. admissible service overpressure:	8.0 bar (the central installation of a pressure reducing valve is compulsory when the static pressure is > 5.0 bar)		
Operating temperature	min. 5 °C, max. 30 °C		
Ambient temperature	min. 5 °C, max. 40 °C		
Pressure loss at nominal flow rate	1.0 bar		
Salt stock	LEX 10 2 x 25 kg	LEX 20 2 x 60 kg	LEX 30 2 x 60 kg
Power supply	12V / 50Hz / 6W		
Device supply	12V DC		
Salt consumption per regeneration	LEX 10 1,6 kg	LEX 20 3,2 kg	LEX 30 4,8 kg
Flushing water quantity	LEX 10 94 l	LEX 20 310 l	LEX 30 310 l
Regeneration time	LEX 10 124 min.	LEX 20 126 min.	LEX 30 125 min.
Volume of the exchanger resin	LEX 10 40 m ³ x °dH	LEX 20 80 m ³ x °dH	LEX 30 120 m ³ x °dH

10.3 LEX 1500 Connect Alternating Water Softening System

Technical specifications

Nominal flow rate	LEX 10	LEX 20	LEX 30
	2.1 m ³ /h	2.5 m ³ /h	2.8 m ³ /h
Nominal capacity	LEX 10	LEX 20	LEX 30
	4.1 mol	4.1 mol	4.1 mol
Nominal pressure	PN 10		
Minimum service pressure	2 bar		
Max. admissible service overpressure	8.0 bar (the central installation of a pressure reducing valve is compulsory when the static pressure is > 5.0 bar)		
Operating temperature	min. 5 °C, max. 30 °C		
Ambient temperature	min. 5 °C, max. 40 °C		
Pressure loss at nominal flow rate	1.0 bar		
Salt stock	LEX 10	LEX 20	LEX 30
	2 x 25 kg	2 x 60 kg	2 x 60 kg
Power supply	12V / 50Hz / 6W		
Device supply	12V DC		
Salt consumption per regeneration	LEX 10	LEX 20	LEX 30
	0.8 kg	1.6 kg	2.4 kg
Flushing water quantity	LEX 10	LEX 20	LEX 30
	47 l	155 l	155 l
Regeneration time	LEX 10	LEX 20	LEX 30
	124 min.	126 min.	125 min.
Volume of the exchanger resin	LEX 10	LEX 20	LEX 30
	20 m ³ x °dH	40 m ³ x °dH	60 m ³ x °dH

10.4 LEX T 1500 Connect Triple Water Softener

Technical specifications

Nominal flow rate	LEX T1 5.0 m ³ /h	LEX T2 5.6 m ³ /h	LEX T3 9.0 m ³ /h	LEX T4 10.2 m ³ /h	LEX T5 12.5 m ³ /h
Nominal capacity	LEX T1 4.1 mol	LEX T2 4.1 mol	LEX T3 4.1 mol	LEX T4 4.1 mol	LEX T5 4.1 mol
Nominal pressure	PN 10				
Minimum service pressure	2 bar				
Max. admissible service overpressure	8.0 bar (the central installation of a pressure reducing valve is compulsory when the static pressure is > 5.0 bar)				
Operating temperature	min. 5 °C, max. 30 °C				
Ambient temperature	min. 5 °C, max. 40 °C				
Pressure loss at nominal flow rate	1.0 bar				
Salt stock	LEX T1 110 kg	LEX T2 200 kg	LEX T3 300 kg	LEX T4 300 kg	LEX T5 500 kg
Power supply	12V / 50Hz / 6W				
Device supply	12V DC				
Salt consumption per regeneration	LEX T1 1.6 kg	LEX T2 2.4 kg	LEX T3 4.8 kg	LEX T4 7.2 kg	LEX T5 10 kg
Flushing water quantity	LEX T1 155 l	LEX T2 155 l	LEX T3 217 l	LEX T4 243 l	LEX T5 ca. 300 l
Regeneration time	LEX T1 126 min.	LEX T2 125 min.	LEX T3 149 min.	LEX T4 186 min.	LEX T5 ca. 200 min.
Volume of the exchanger resin	LEX T1 80 m ³ x°dH	LEX T2 120 m ³ x°dH	LEX T3 240 m ³ x°dH	LEX T4 360 m ³ x°dH	LEX T5 500 m ³ x°dH

11. Dimensions and spare parts

11.1 LEX 1500 Connect Single Water Softener

1 Control head
 LEX 10 1500.00.903
 LEX 20 1500.00.920
 LEX 30 1500.00.921

2 Control Connect
 LEX 10 1500.00.906
 LEX 20 1500.00.907
 LEX 30 1500.00.908

3 Cabinet, incl. cover
 LEX 10 1500.00.924
 LEX 20/30 1500.00.925

4 Bypass & blending valve
 1700.00.001

5 Tundish
 0214.00.908

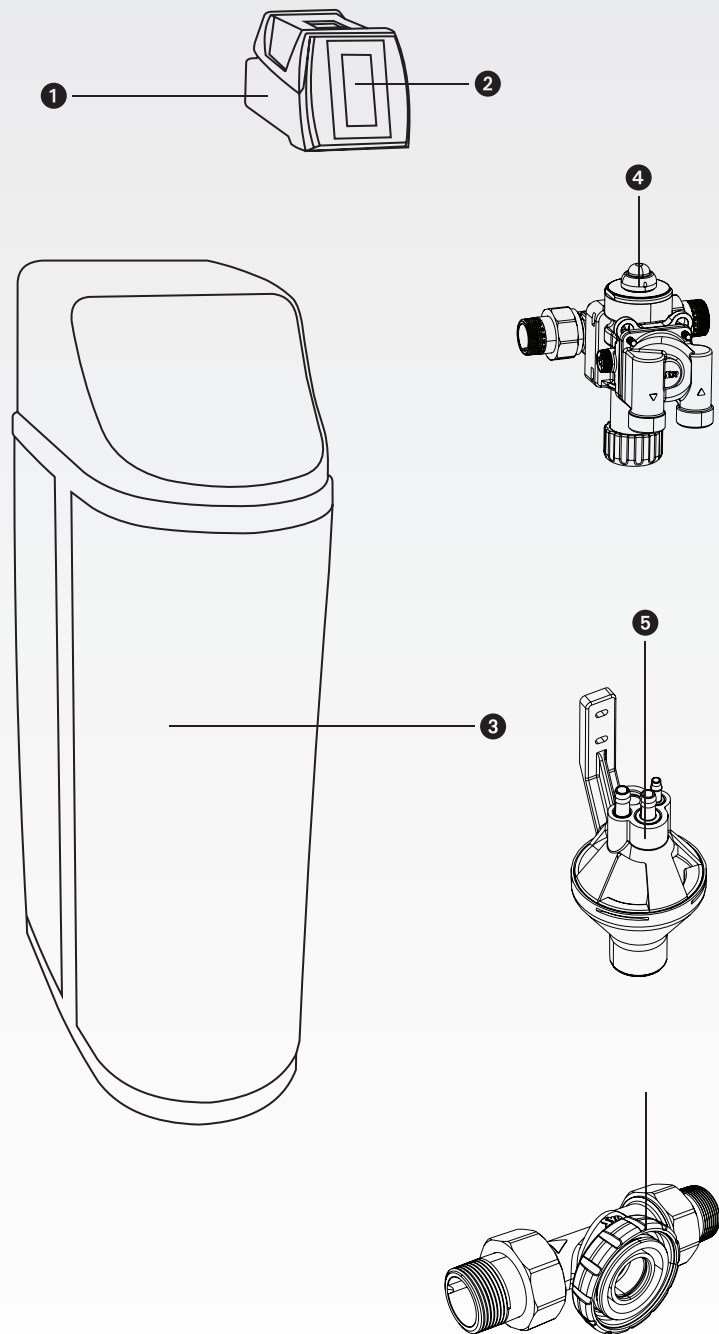
Connection flange
 5315.15.008

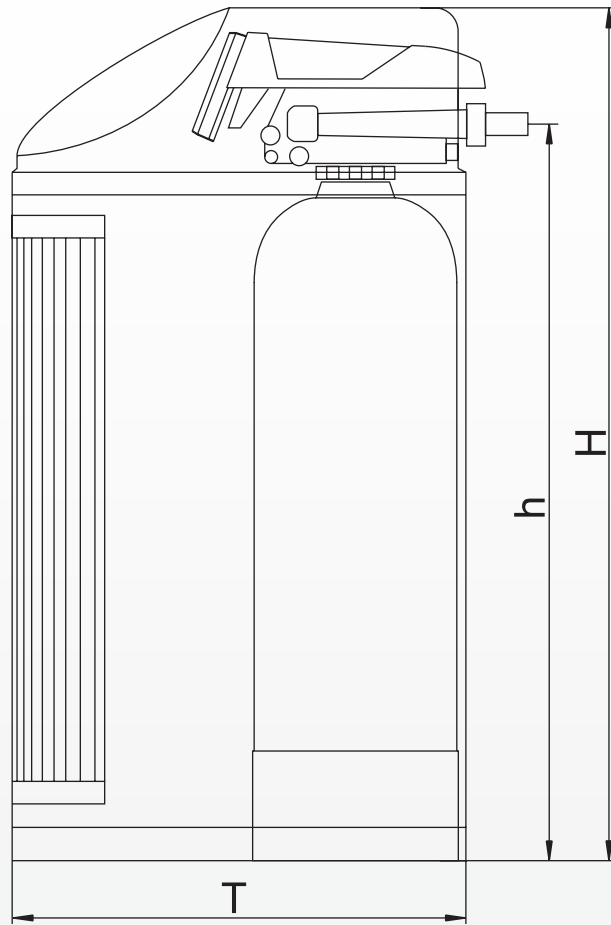
No figure

Salt tank
 LEX 10 1500.00.913
 LEX 20/30 1500.00.901

Seal kit
 1500.00.904

Hoses
 1500.00.905





Connection flange not included in delivery!

Dimensions (mm)	LEX 10	LEX 20 / 30
H	860	1130
h	730	970
T	600	600

11.2 LEX Connect 1500 Double Water Softener

- 1** Control head
 LEX 10 1500.00.903
 LEX 20 1500.00.920
 LEX 30 1500.00.921

- 2** Control Connect
 LEX 10 1500.00.906
 LEX 20 1500.00.907
 LEX 30 1500.00.908

- 3** Cabinet, incl. cover
 LEX 10 1500.00.924
 LEX 20/30 1500.00.925

- 4** Shut-off/bypass valve
 1700.00.002

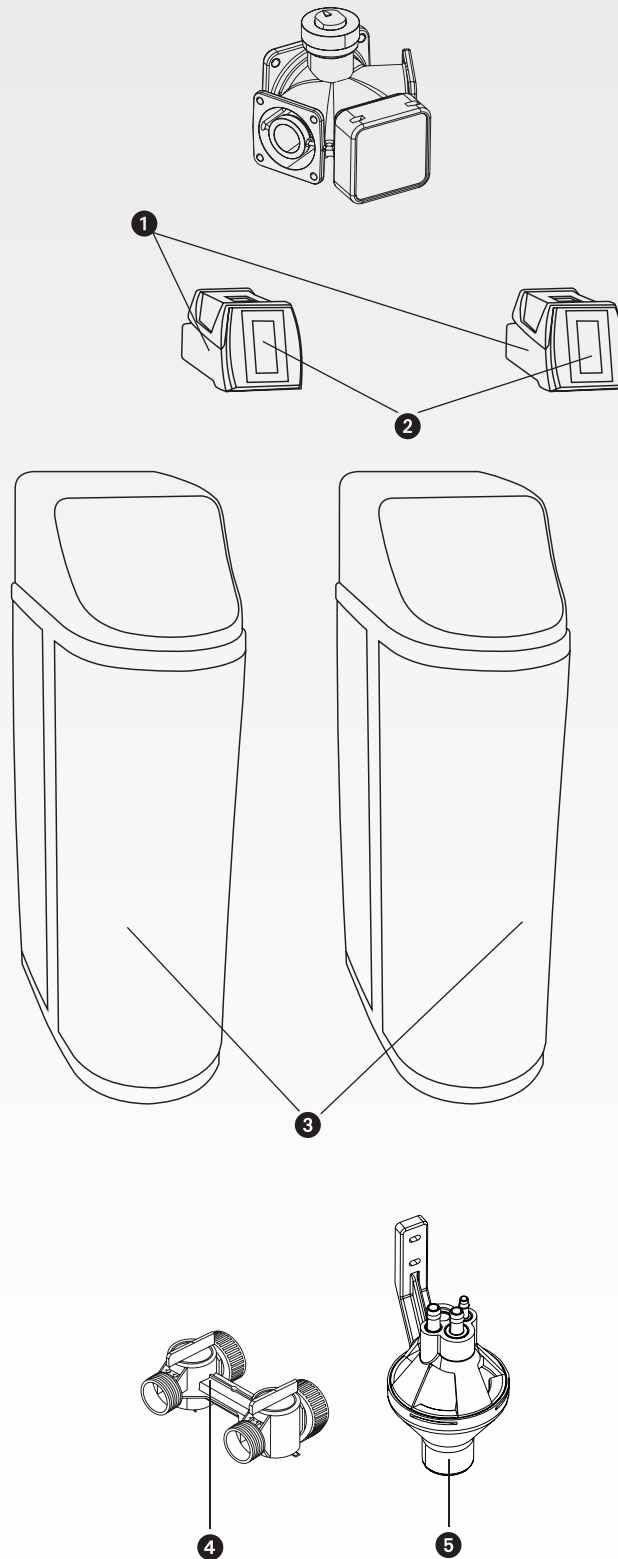
- 5** Tundish
 0214.00.908

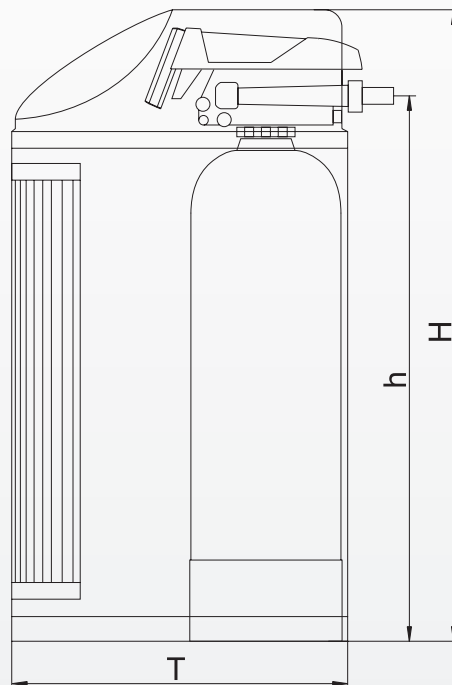
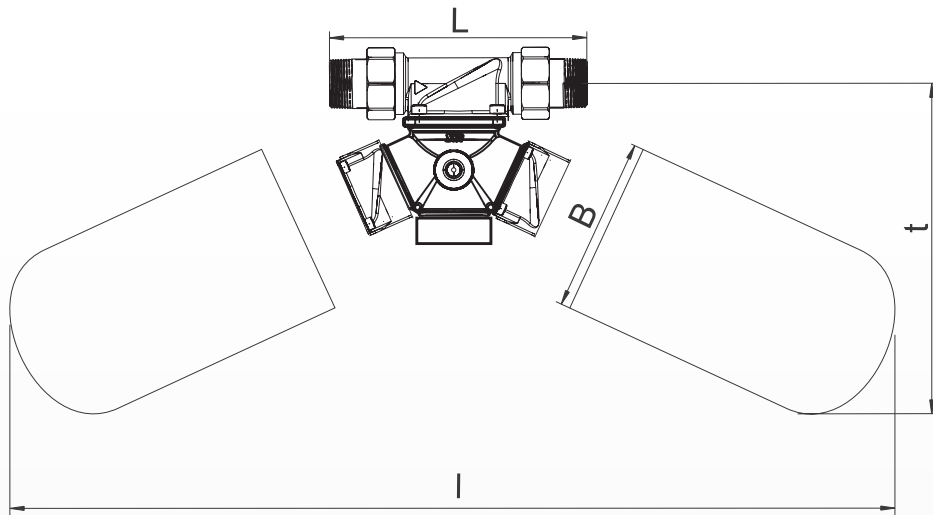
No figure

- Salt tank**
 LEX 10 1500.00.913
 LEX 20/30 1500.00.901

- Seal kit**
 1500.00.904

- Hoses**
 1500.00.905

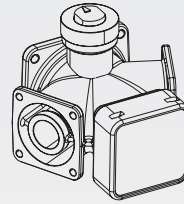




Universal flange max not included in delivery

Nominal size		LEX 10	LEX 20/30
Dimensions	H (mm)	860	1.130
	h (mm)	730	970
	T (mm)	600	600
	t (mm)	about 1.000	about 1.000
	I (mm)	about 1.800	about 1.800

11.3 LEX 1500 Connect Alternating Water Softening System



- 1 Control head
 - LEX 10 1500.00.934
 - LEX 20 1500.00.935
 - LEX 30 1500.00.936

- 2 Control Connect
 - LEX 10 1500.00.914
 - LEX 20 1500.00.915
 - LEX 30 1500.00.916

- 3 Cabinet, incl. cover
 - LEX 10 1500.00.924
 - LEX 20/30 1500.00.925

- 4 Bypass valve
 - 1700.00.002

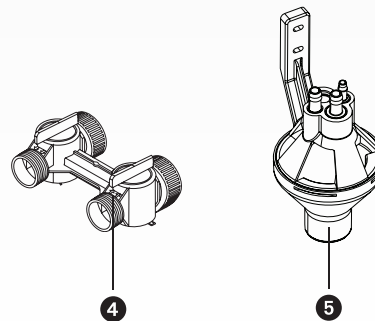
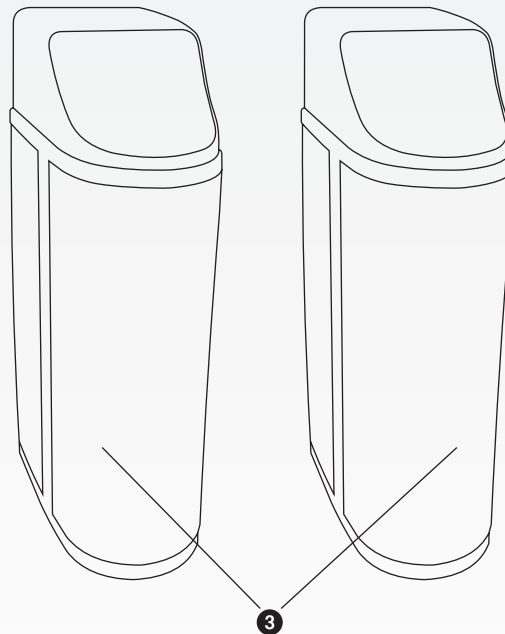
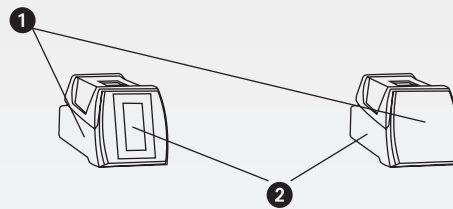
- 5 Tundish
 - 0214.00.908

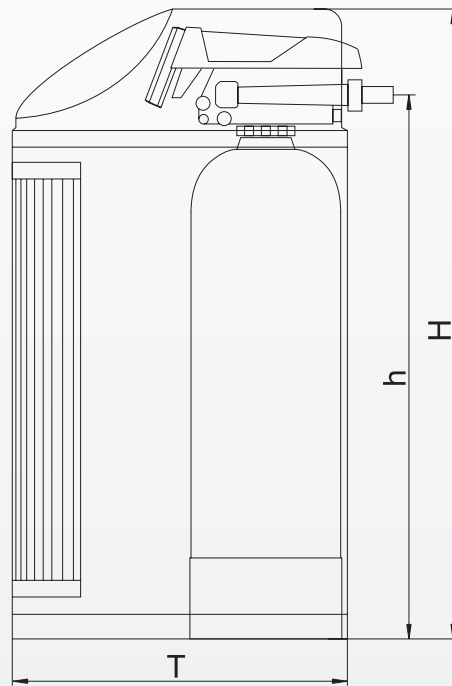
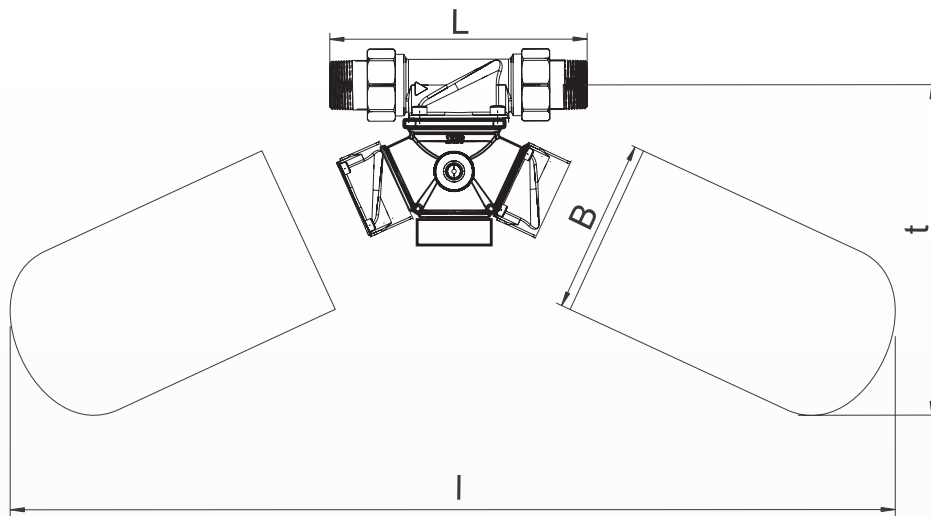
No figure

- Salt tank**
 - LEX 10 1500.00.913
 - LEX 20/30 1500.00.901

- Seal kit**
 - 1500.00.904

- Hoses**
 - 1500.00.905

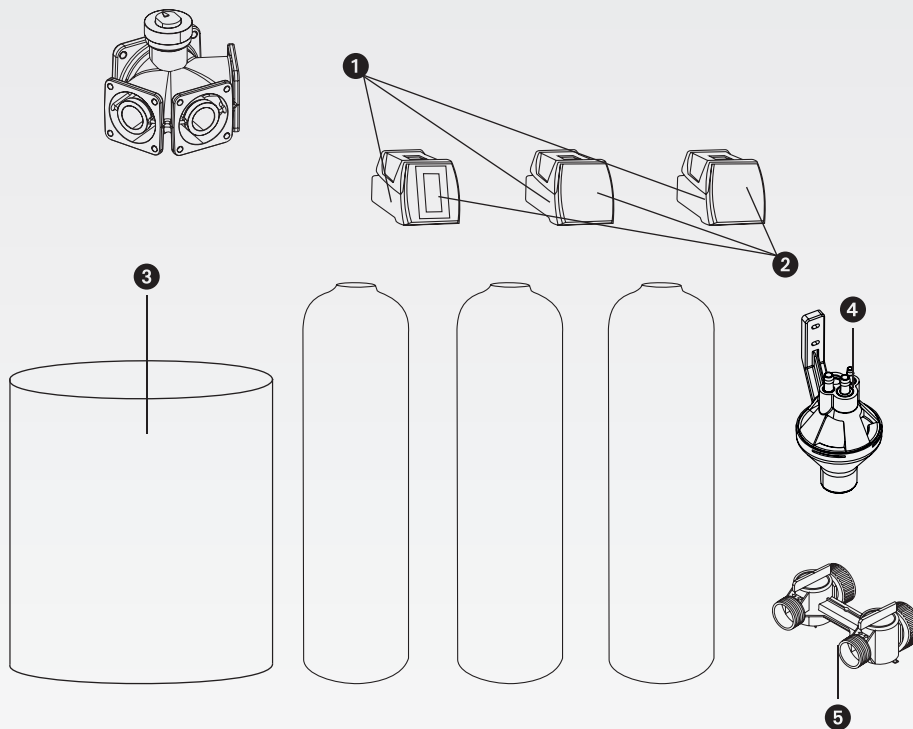




Max connection flange not included in delivery!

Nominal size		LEX 10	LEX 20 / 30
Dimensions	H (mm)	860	1.130
	h (mm)	730	970
	T (mm)	600	600
	t (mm)	about 1.000	about 1.000
	I (mm)	about 1.800	about 1.800

11.4 LEX T 1500 Connect Triple Water Softener



- 1** Control head
 LEX T1 1500.00.920
 LEX T2 1500.00.921
 LEX T3 1500.00.937
 LEX T4 1500.00.938

- 2** Control Connect
 LEX 10 1500.00.941
 LEX 20 1500.00.942
 LEX 30 1500.00.943
 LEX 40 1500.00.944

- 3** Cabinet, incl. cover
 T1 1500.00.931
 LEX T2 1500.00.932
 LEX T3 + T4 1500.00.933

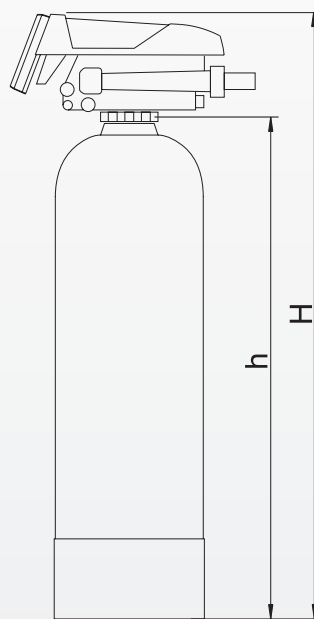
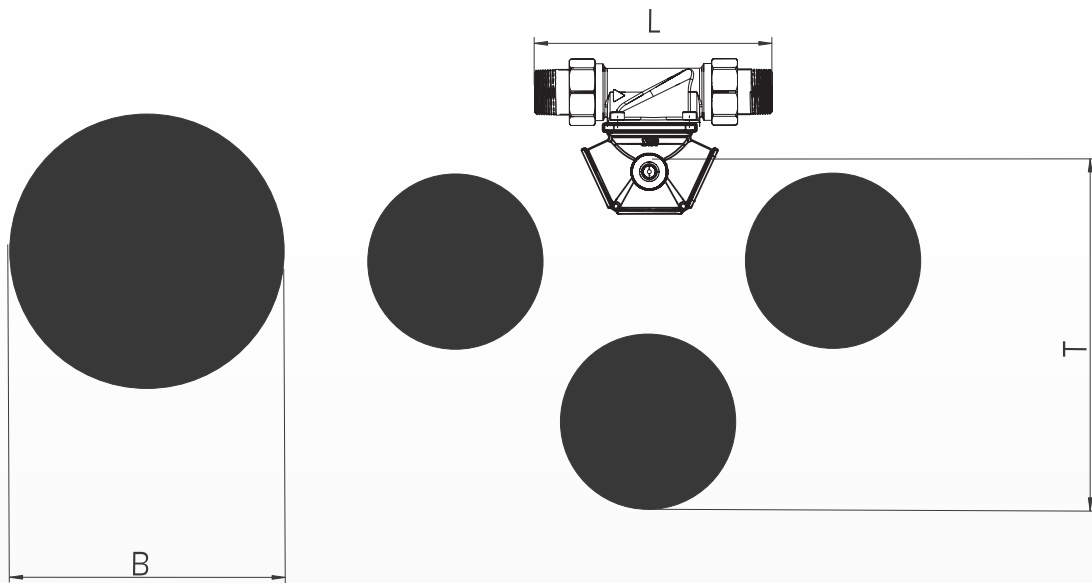
- 4** Bypass valve
 1700.00.002

- 5** Tundish
 0214.00.908

No figure

Seal kit
 1500.00.904

Hoses
 1500.00.905



		LEX T1	LEX T2	LEX T3	LEX T4
Dimensions	H (mm)	1.070	1.070	1.150	1.570
	h (mm)	900	900	980	1400
	T (mm)	about 1.000	about 1.000	about 1.000	about 1.000
	B (mm)	460	460	620	620

12. Maintenance report

Date of installation:

done

Date:

Raw water hardness, measured [°dH]:

set [°dH]:

Blended water hardness, measured [°dH]:

Water meter [m³]:

Cleaning - Water tank

Cleaning/Exchange - Strainer

Check/Exchange - Optical glass

Cleaning/Exchange - Chlorinator cell

Cleaning/Check - Injector

