

CONDAIR SOFT

water softening system



ASSEMBLY AND OPERATING INSTRUCTIONS

Condair Soft water softening system
28.06.2023

Thank you for choosing Condair

Installation date (DD/MM/YYYY):

Commissioning date (DD/MM/YYYY):

Installation site:

Model:

Serial number:

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1. General Safety Instructions

1.1 Explanation of symbols and instructions

These operating instructions contain important specifications on the safe operation of the system.

These operating instructions, particularly the section on safety instructions, must be observed by all those who carry out work on the system. This applies to the installation company as well as the system operator. In addition, the special rules and regulations for accident prevention that apply to the usage location must be observed.

The following symbols are used to indicate personal hazards and guidance on the proper handling of the system in these operating instructions:



DANGER!

This symbol indicates an imminent threat to personal health which may be fatal. Failure to observe these instructions may result in serious health hazards or even life-threatening injuries.



WARNING!

This symbol indicates a potential threat to personal health which may be fatal. Failure to observe these instructions may result in serious health hazards or even life-threatening injuries.



CAUTION!

This symbol indicates a potentially dangerous situation. Failure to observe these instructions may result in minor injuries or property damage.



INSTRUCTION

This symbol provides important information on the proper handling of the system. Failure to observe these instructions may result in faults on the system or in the vicinity.

1.2 Operator's obligation

The operator undertakes to ensure that all those working on the system

- are familiar with the basic health and safety and accident prevention regulations and have been instructed in the handling of the system,
- have read and understood the safety section and the warnings in these operating instructions and have confirmed this by their signature, and
- have their safety-conscious work checked at regular intervals.

1.3 Staff obligation

Prior to commencing work, all individuals who are commissioned to work on the system or carry out such work independently undertake to:

- read the safety section and the warnings in these operating instructions and confirm by their signature that they have understood them.
- observe the basic health and safety and accident prevention regulations.

When operating the system, the safety instructions must be strictly observed.

1.4 Staff training

Only trained and instructed personnel may work on the system.

- The assembly, commissioning, operating, set-up, equipment, maintenance and servicing responsibilities of the personnel must be clearly defined.
- Staff members who have not as yet been trained may only work on the system under the supervision of an experienced co-worker.

1.5 Intended use

The system may only be used for the desalination of drinking water, well water or surface water which is free from particles and metal ions. The restrictions regarding the chemical analysis of the feed water, pressure, temperature and flow rate specified in the technical data apply.

Intended use also includes

- observance of all instructions in the operating instructions and
- compliance with inspection and maintenance intervals.

The restrictions specified in the technical data apply with regard to the chemical analysis of the feed water, pressure, temperature and flow rate.

The following are also deemed non-intended use: utilisation as filter (mechanical filtration without regeneration with brine), storage tank (after removal of the ion exchanger material), pressure reservoir. Furthermore, hot water may not be fed into the system.

1.6 Hazards in handling the system

- The system has been designed and manufactured in accordance with the state of the art and the recognised safety regulations.
- The system must be installed in such a way that the operating and control elements are easily accessible at all times. The floor, ceiling and walls must be level and clean.

Nevertheless, its use may pose a health hazard to the user or third parties or put their lives at risk, or cause damage to the system itself or other property. The system is only to be used for its intended purpose (see 1.5) and in a safe condition.

The following residual hazards exist:

Water damage

- To prevent flooding due to leakage, the installation room must be equipped with a floor drain and/or a leakage monitor with a corresponding alarm.

Electric shock

- Work on the electrical supply may only be carried out by a qualified electrician.
- Check the system's electrical equipment on a regular basis. Any loose connections or scorched cables must be removed immediately.
- The control cabinet must be kept locked at all times. Access is only granted to authorized personnel.
- If work needs to be carried out on live parts, a second person must be called in so that they can switch off the main switch as necessary.
- Do not touch the electrical components with wet hands.
- Disconnect the system from the power supply before working on electrical system parts.

Mechanical/hydraulic energy

- Some system parts are under overpressure of up to 25 bar.
- The system must be de-pressurised before repair or maintenance work is carried out.

Hygienically critical applications

- There is a risk of contamination of system components if the system has not been adequately preserved. The preservation instructions must be observed.

Faults which could impair safety must be rectified immediately. This is ensured by the operator himself or an operator-commissioned company.

1.7 Hazard-preventing protective devices and safety measures

1.7.1 Protective devices

- Before switching on the system, all protective devices must be properly fitted and checked to ensure they are in working order.
- Protective devices may only be removed after the machine has been switched off and secured against being switched back on.
- The required personal protective equipment for the operating personnel must be provided by the operator and worn by the operating personnel when they are working on the system.
- All existing protective devices must be checked regularly by the operator or an operator-commissioned company.

1.7.2 Informal safety measures

- The operating instructions must be kept at the usage location permanently.
- In addition to the operating instructions, the generally applicable and local regulations for accident prevention and environmental protection must be provided and observed.
- All safety and hazard notices on the system as well as the labelling of the operating and control elements must be kept in legible condition.

1.8 Safety instructions for maintenance work

- The operator must ensure that all maintenance, inspection and installation work is carried out by authorised and qualified specialist personnel who have acquired the necessary information by studying the operating instructions.
- Prior to all repair and maintenance work, the system must be switched off and secured against unintentional start-up. The procedure for shutting down the system described in the „Commissioning and Decommissioning“ section of the technical documentation must be observed at all times.
- Before any work is started on the system's electrical equipment, the corresponding section must be checked to ensure that it is not live. In addition, the system must be secured against being switched back on.
- Suitable protective clothing appropriate to the hazard level in question must be worn while the work is being carried out.
- Immediately after completion of the work, all safety and protective devices must be refitted or restarted.
- The steps described in the „Commissioning and decommissioning“ section must be performed prior to recommissioning.

1.9 Disposal of system components and operating materials

The system components must be disposed of, if necessary also separately, in accordance with the local regulations.

1.10 Unauthorized modification and production of spare parts

- Conversion or modifications to the system are only permitted following consultation with the manufacturer.
- This also applies to control unit program changes.
- Original manufacturer-authorized spare parts are used for safety purposes.
- If other parts are used, the warranty becomes void and no liability is accepted for the resulting consequences.

1.11 Warranty and liability

This product corresponds to the state of the art and has been designed, manufactured and subsequently subjected to quality control in accordance with the applicable rules of technology. Should there nevertheless be cause for complaint, any claims for compensation against the manufacturer of this product are subject to the latter's general terms and conditions of sale and delivery.

Warranty and liability claims for personal injury and property damage due to one or more of the following causes are excluded:

- Improper use of the system
- Improper assembly, commissioning, operation and maintenance of the system
- Operating the system with defective safety devices or improperly installed or non-functioning safety and protective devices
- Non-compliance with the instructions in the operating instructions regarding transport, storage, installation, commissioning, operation (note: the operating log should be filled in on a continuous basis), and maintenance of the system.
- Unauthorized, unapproved structural changes to the system
- Unauthorized modification of the control parameters
- Inadequate monitoring of system components that are subject to wear and tear
- Improperly performed repairs

Disasters caused by exposure to foreign bodies and force majeure.

1.12 Safety instructions for storage



CAUTION!

The water softening system is not protected against contamination by preservation upon delivery. In the case of long-term storage prior to system commissioning, the system must be preserved to prevent contamination. Please ask the system manufacturer about the possibilities of preservation. If the water softening system is stored in an area where there is a risk of frost, all residual water must be removed.

2. Transportation and Storage

2.1 Transportation to the customer



CAUTION!

All systems must be secured against slipping and falling over during transport. Allowing the system to tip out of the fixed stand is not permitted. If system parts are protruding from the base area of the pallet, such protruding parts must be protected against damage while other parts/ systems are being loaded.

- The transport weight corresponds to the unladen weight and is specified in the technical data.
- The system may still be damaged by extreme frost. The systems are filled with a preservative/antifreeze mixture before delivery. The frost protection is effective down to -10°C .

2.2 Storage at the customer

- The maximum storage period of the original packed system is 3 months at 20°C . The preservative must then be rinsed out and, if longer storage is desired, replenished.
- Extreme frost may damage the system. The systems are filled with a preservative/antifreeze mixture before delivery. The frost protection is effective down to -10°C .

2.3 Transportation to the installation site

- Transport the unit to the intended location with care using a suitable lifting vehicle.
- Observe any specifications relating to the system's centre of gravity on the packaging.

2.4 Delivery scope

The system consists of:

- 2 exchanger tanks containing a central tube with lower slotted nozzle
- Ion exchanger (resin) for both filters and, if necessary, quartz gravel
- Control head for filter A and connection adapter for filter B, each equipped with upper slotted nozzle
- Piping between filter A and B, hose material
- Brine tank with salt carrier bottom and brine valve

3. Technical Data / Product Description

3.1 Technical Data

3.1.1 General data of the series

Flow pressure min.	bar	3
Water pressure max.	bar	8
Water temperature min / max	°C	2 – 30
Operating temperature max.	°C	5 – 40
Connections for raw and soft water	R	1"
Connection for rinse water	R	1/2"
Electrical connection primary	V/Hz	230 / 50
Electrical connection secondary	V/Hz	12 / 50

3.1.2 Special data of the sizes

Type Condair Soft	20	60	120	200	320	400
Capacity at brining (m³ x °dH)	16	56	109	182	298	400
Salt consumption with at full salting (kg)	1.2	3.0	6.0	10.0	16.0	20.0
Resin volume (l)	2 x 5	2 x 15	2 x 30	2 x 50	2 x 80	2 x 100
Nominal capacity (m³/h)	0.25	0.68	1.35	2.25	3.6	4.5
Pressure loss at nominal capacity (bar)	0.2	0.3	0.4	1.0	1.33	1.73
Minimum flow (m³/h)	0.04	0.08	0.15	0.25	0.4	0.5
max. short-term performance (m³/h)	1.0	1.0	1.5	2.5	4.0	4.5
Waste water flow, max. (m³/h)	0.30	0.30	0.62	0.62	0.96	1.20
Waste water volume, total (l)	159	184	257	257	334	369
Brine tank (mm)	560x400 (WxH)	490	490	550	550	660
Height of ion exchange tank (mm)	454	903	903	1,380	1,381	1,660
Height of brine tank (mm)	450	673	673	1.047	1.047	990
Net weight (kg)	40	60	95	135	210	270
Operating weight (kg)	150	225	280	480	750	860
Dimensions of the unit W x D x H (mm)	620 x 800 x 560	607 x 736 x 1.063	647 x 726 x 1.063	645 x 807 x 1.540	827 x 839 x 1.541	846 x 1043 x 1.840

4. Installation and Assembly

4.1 Installation



INSTRUCTION

For installation and assembly, refer to the existing plans and drawings from the technical appendix.

4.1.1 Installation site requirements

- The space required for the system is specified in the dimensions provided in the technical data.
- The installation room must meet the ambient conditions according to the technical data.
- The installation surface must be level and horizontal and have sufficient load-bearing capacity.
- The room must be well ventilated and frost-proof.
- The necessary electrical connections, as specified in the technical data, must be available on-site at a maximum distance of 1 m from the system.
- Depending on the system size, a control air connection must be available.
- The raw water connection must be provided with a shut-off device.
- The on-site waste water connection must be provided as a free output in accordance with EN 1717 and must be installed and usable in the required cross-section. Observe the waste water capacity specified in the technical data.



WARNING!

To prevent flooding due to leakage, the installation room must be equipped with a floor drain and/or a leakage monitor with a corresponding alarm.

When using drinking water as the raw water of a softening system, the following must be observed:



INSTRUCTION

In accordance with EN 1717, softening systems may be equipped with the following safety fittings in drinking water installations: free output or pipe isolator. It should also be noted that DIN 19636 „Softening systems in drinking water installations“ requires the following – page 2, point 4.7 Protection against germs: „Since softening systems tend to become contaminated, especially in stop-start operation, this must be prevented by means of suitable design or chemical-physical measures.“

An appropriately suitable fuse fitting for system separation must be installed by the customer on-site. Upon request, the manufacturer may add silver resin or supply a chlorine cell for installation in the brine exchange hose to enable automatic disinfection (subject to an extra charge).

4.1.2 System installation

- Unpacking the system
- Check the delivery to ensure it is complete and free from transport damage.

INSTRUCTION

Any deviations or damage must be reported to the supplier immediately.

- Transport the system to the intended location with care using suitable lifting equipment.
- The installation is carried out on an installation surface in accordance with the requirements above.

4.2 Assembly

4.2.1 Necessary qualification of the assembly personnel

INSTRUCTION

The water-side connection may be carried out by trained specialist personnel only. General guidelines (DIN, DVGW, SVGW, ÖKGW) and local installation regulations must be observed during system installation.

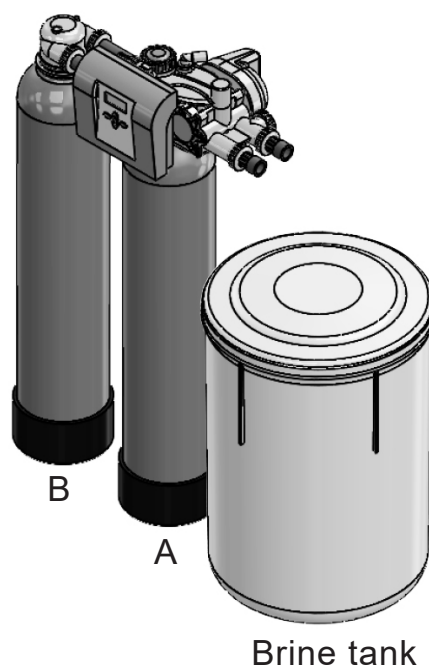
4.2.2 Washing the gravel

Systems of the sizes 20 to 200 are already filled with supporting gravel upon delivery. For systems of size 320 and larger, proceed as follows:

To remove impurities, wash the supplied quartz gravel in a bucket under running water, stirring constantly.

4.2.3 Positioning the container

Position the two pressure tanks and the salt dissolving tank and align them in accordance with the drawing.



4.2.4 Filling in gravel and resin

Systems of sizes 20 to 200 are already filled with resin and quartz gravel upon delivery.

For systems of size 320 and larger, filling must be carried out as follows:

- If the softening system is not commissioned immediately after installation and if frost is to be expected before commissioning, the filling must be carried out without water.
- Unscrew the control head or connection adapter with upper slotted nozzle from the container.
- Pull the central tube with the lower slotted nozzle out of the control head / adapter and place it back in the container so that the lower slotted nozzle is in a central position on the bottom of the container.
- Cover the opening of the central tube so that no impurities can fall into it.
- Fill the container approx. ¼ full with clean water.
- Fill the container with the quartz gravel first, then the exchanger resin (quantities: see technical data).
- Divide the delivered gravel and resin quantities equally between the two containers.
- Rinse the container thread with clean water to remove any impurities.
- Uncover the central tube opening again. Check that the O-ring is sitting in the upper nozzle (control head) and is undamaged.
- Replace the control head or connection adapter with the upper slotted nozzle centrally on the central tube and screw it into the container thread.

4.2.5 Assembling the control head and connection adapter on the pressure tanks

- Use drawing „Soft control head on pressure tank A, intermediate piping and adapter on pressure tank B“ in the appendix
- Screw one upper slotted nozzle each into both the inner thread of the soft control head and the connection adapter for pressure tank B, if the upper slotted nozzles are not already screwed in upon delivery
- Check if the O-ring is present above the outer thread on the connection adapter
- Place the connection adapter on the connection thread of pressure tank B, secure pressure tank B against twisting and carefully screw the adapter into the pressure tank thread as far as it will go. Ensure the connection is pressure-resistant.
- Check that the O-ring above the outer thread on the soft control head is present
- Place the soft control head on the connection thread of pressure tank A, secure pressure tank A against twisting and carefully screw the control head into the pressure tank thread as far as it will go. Ensure the connection is pressure-resistant.

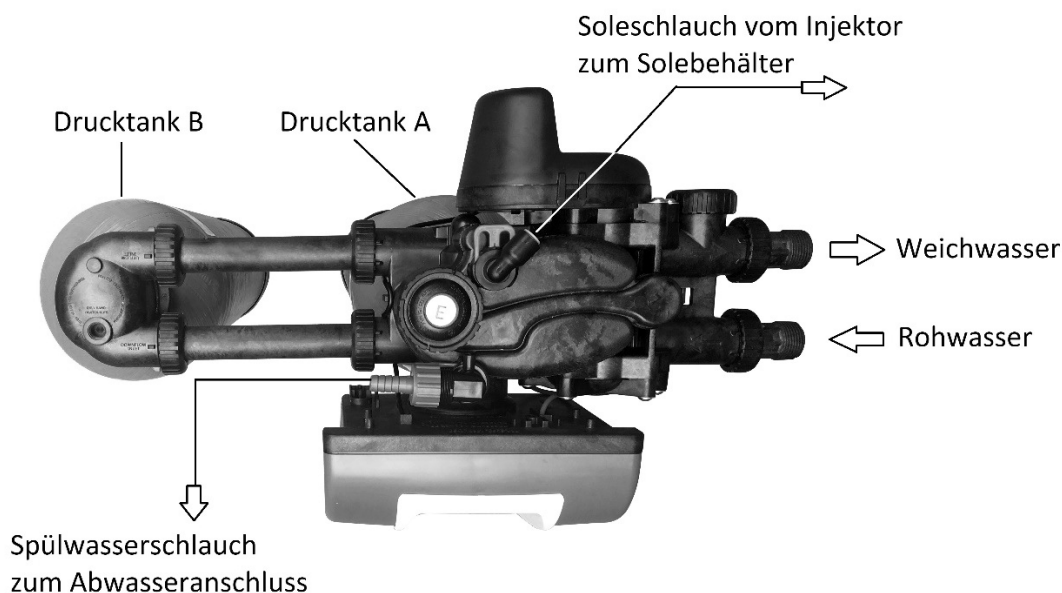
4.2.6 Establishing internal piping and water connections

Connect the internal piping between the connection adapter on pressure tank B and the soft control head on pressure tank A in accordance with drawing “Soft control head on pressure tank A, intermediate piping and adapter on pressure tank B” in the appendix.

The on-site raw and soft water pipes must already be routed to the system in the required cross-section and position. The on-site waste water connection must be installed and usable in the required cross-section. On-site installation of a 0-10 bar pressure gauge and a test tap in the raw and soft water pipes respectively is recommended.

INSTRUCTION

All pipe connections must be connected when the system is not live. Ensure that no squeezing or kinking of the hoses occurs and screw hose connections tightly. The concentrate and drain lines must be routed with a downward slope to the free wastewater input. The waste water must be allowed to flow off without backpressure.



Brine line:

Use the brine line to connect the injector at the control head with the brine valve in the brine tank (PE hose).

Raw water connection:

Connect the raw water pipe to the raw water connection via the on-site shut-off valve.

Soft water connection:

Connect the soft water connection to the consumer(s).

Waste water connection:

Route the rinsing output of the control head and the overflow connection of the brine tank to the free input in the waste water connection by means of one fabric hose respectively.

INSTRUCTION

Negative pressure must not be generated in the exchanger tank or other components of the softening system under any circumstances. If necessary, an additional ventilation valve to prevent negative pressure must be installed on-site.

4.3 Electrical connection

4.3.1 Necessary qualification of the assembly personnel



DANGER!

The electrical installation must be carried out by a qualified electrician, in compliance with the VDE and EVU installation regulations, factory standard, etc. and in accordance with the valid country-specific regulations.

4.3.2 Establishing the electrical connections



DANGER!

The electrical installation must be carried out by a qualified electrician, in compliance with the VDE and EVU installation regulations, factory standard, etc. and in accordance with the valid country-specific regulations.

- The internal system modules are already wired to the control unit upon delivery.
- The power supply to the control unit is provided by the cable that is permanently connected to the control unit with the integrated 230V-50Hz/ 12V-50Hz AC-AC adapter.
- The control unit's current consumption with the system's connected internal actuators is 500 mA.
- An AC earthed socket (type CEE 7/3) fused in accordance with the system output must be assembled within reach of the control unit connection cable's length. Then, insert the plug of the control unit's power supply cable into the socket.
- One output each is available on the control unit for the signalling of a regeneration (RLY1) and of an internal control error (RLY2) to the ZLT, (labelled RLY1 and RLY2 respectively at the right edge of the board).



This involves two live NO contacts with a joint 12VDC conductor (COM), with an authorised load of 100mA per output. The total current of both outputs must not exceed 200mA. If potential-free signal outputs are required, the on-site installation of two cut-off relays with 12 VDC/max. 100 mA is recommended. Check the installation dimensions of the relays before assembling them under the control cover.

5. Commissioning and Decommissioning

5.1 Commissioning

5.1.1 Inspecting the hydraulic

connections before commissioning:

Are the raw, soft, waste, brine and overflow lines properly connected and tight?
Is sufficient flow pressure available at max. capacity? (See technical data in section C)

Electrical connections:

Is an earthed socket output assembled within reach of the mains connection cable and is it permanently live? Is the water meter sensor plugged into the control unit?

5.1.2 Commissioning

Check the system for leaks during commissioning. Leaks may occur during transportation, which need to be rectified during commissioning.

5.1.2.1 Preparations

- Close the on-site shut-off valves upstream and downstream of the softening system
- Plug the mains adapter into the shockproof socket

5.1.2.2 Set the control unit

Read section F (control unit) of these operating instructions and the control unit programming instructions in the appendix carefully before commissioning.

The control unit is largely pre-set at the factory. Check the control unit settings using the programming instructions for the applicable size 20, 60, 120, 200, 230 or 400 in the appendix and adjust the quick setting special values, which depend on the local conditions (e.g. raw water hardness).

5.1.2.3 Rinsing the filters

Each filter must be backwashed and the brine tank filled with water before commissioning.

Proceed as follows:

- Open the shut-off valve in the raw water line Press the REGEN button for three seconds, the regeneration on filter A or B starts with the BACKWASH step and the backwash time is counted down.
- Wait until the BACKWASH step is finished and the control unit is in the BRINE step
- The injector must now draw in water (later brine) from the brine tank. This can be checked by grasping the suction hose near the injector connection with one hand – there should be a slight vibration.
- If a leak is present, air and no brine is sucked in. In this case, tighten the union nut on the injector by hand
- Press the REGEN button to cancel the BRINE step. The RINSE step then appears

- To cancel the RINSE step, press the REGEN button. The FILL (brine tank) step appears
- Wait for this step
- Rinse the second filter by proceeding as described above for the first filter.
- After completing the FILL step, check whether the water in the brine tank is at least approx. 20 mm above the salt carrier bottom or higher (visible through the semi-transparent container wall).
- The water should be at least approx. 20 mm above the salt carrier bottom after the second regeneration run. Otherwise, check the parameter settings of the control unit, where Step 14 „Filling quantity“, must be set correctly. After correcting the „Filling quantity“ parameter, following the specifications in the appendix, start another regeneration and proceed as described above once again until the „Fill“ step is completed.

5.1.3

Establishing the operating state



INSTRUCTION

Only evaporated salt as per DIN EN 973 is suitable for regeneration. Exclusive use of tablet salt of higher purity according to DIN EN 973, type A is recommended.



INSTRUCTION

When using fine-grained evaporated salt, a gauze cloth (mesh size 200 µm), cut to size, must be placed on the salt carrier bottom. The gauze cloth must cover the entire salt carrier bottom with no gaps, be guided upwards along the container walls and be held in place by throwing it over the container collar before securing the lid.

- Fill the brine tank with the regenerating salt and distribute it evenly on the salt carrier bottom
- Open the shut-off valves in the raw and soft water lines so that water can be drained
- Throttle the soft water quantity at the soft water shut-off valve so that the max. flow rate is not exceeded. Otherwise, the system will be hydraulically overrun, which may result in a residual hardness increase. In the absence of a flow or quantity indicator, the flow rate must be determined by gauging.



INSTRUCTION

The flow rate limitation must not be carried out in the raw water pipe, otherwise not enough water can be drained for regeneration.

5.2 Decommissioning

5.2.1 Short-term decommissioning (less than two weeks)

- It is essential to wait until any ongoing regeneration has been completed. Otherwise, there is a risk that hardness or even brine will be fed into the system during recommissioning.
- Pull out the mains plug
- Close the shut-off valves in the raw and soft water lines
- If a supply to the downstream consumers is required, including a raw water supply, open the bypass line (if available).

5.2.2 Long-term decommissioning (more than two weeks)

The softening system (both filters) must be completely regenerated before it is decommissioned for a longer period of time.

- To trigger a regeneration, press the REGEN button for at least 3 s (the first of the two filters is now regenerated) and wait for it to be completed.
- Wait at least 5 hours (at min. 15°C) until new brine has formed in the brine tank
- Trigger another regeneration by pressing the REGEN button for at least 3 s (the second of the two filters is now regenerated) and wait for it to be completed.
- After regeneration has been completed, pull the mains plug out of the socket.
- If the softening system is at risk of frost during the decommissioning period, the water must be removed from the filter. The residual moisture in the filter is sufficient to prevent the resin from drying out. In this state, the resin can tolerate frost down to –10°C without being damaged.

5.2.3 Recommissioning

5.2.3.1 Recommissioning after a short decommissioning period

- Check that the softening system and all hydraulic connections are in proper working order, and that the salt dissolving tank is completely filled with regenerating salt
- Plug in the mains plug
- Slowly open shut-off valves in raw and soft water lines

5.2.3.2 Recommissioning after a long decommissioning period

After a long decommissioning period, regeneration combined with resin disinfection must be carried out before the system can be recommissioned. For the disinfection, we recommend Lubron disinfection tabs (DesiTabs).

- Check that the softening system and all hydraulic connections are in proper working order and the salt dissolving tank is completely filled with regenerating salt
- Using a hose, fill the salt dissolving tank with water from an external supply until the water is above the salt carrier bottom (salt is in contact with the water, brine formation is enabled)
- Before regeneration, wait at least 5 hours (at min. 15°C) for brine to form (starting from the last regeneration or fill of regeneration salt)
- Drop DesiTab tablets (number of tablets according to the instructions enclosed with the tablets) into the brine standpipe and wait 10 min.
- Plug in the mains plug
- Open the shut-off valve in the raw water line
- Press the REGEN button for three seconds, the regeneration on filter A or B starts with the BACKWASH step and the backwash time is counted down.
- Wait until the BACKWASH step has been completed and the control unit is in the BRINE step
- Observe the brine disinfectant solution mixture soaking in. At a solution level of approx. 70 mm in the brine tank, when nothing more is being sucked in, close the shut-off valve in the raw water line and disconnect the control unit plug
- Wait approx. 30 minutes, then reconnect the control unit plug
- Slowly open the raw water ball valve and allow the regeneration to run until it finishes. The brine tank is then refilled with water and new brine is formed.
- Wait at least 5 hours (at min. 15°C) until new brine has formed in the brine tank
- Trigger another regeneration by pressing the REGEN button for at least 3 s and repeat this procedure for the second filter. If filter A was regenerated previously, the regeneration starts at filter B and if filter B was regenerated previously, the regeneration starts at filter A
- After both filters have been regenerated in the manner described here, which includes disinfection, the system is available for the production of soft water once more.
- Slowly open the shut-off valves in the soft water line.

6. Control Unit

6.1 Adjusting the control unit

6.1.1 Language, time and total hardness quick setting

Proceed as shown in the following table:

Step	Operation		Display content
	Starting point		Time of day (for example) A 7:35
01	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
02	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 08:40
03	NEXT	→	Time of day (for example) A 8:40
04	NEXT + ▲ press together and hold briefly	→	German Set Language
05	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20°dH
06	NEXT + ▼ or ▲	→	Residual hardness Set 0°dH
07	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
08	NEXT	→	Time of day (for example) A 8:41

6.1.2 Parameter setting

The setting

- of cycles (regeneration process) and
- parameters

is a necessary prerequisite for the correct operation of the system. The control unit is preset ex-works to match the size. Check all settings and use the corresponding size-specific tables in the appendix. These tables contain all the values to be set, including the quick setting from section 1.1.

6.2 Operating displays

Operating displays appear in black letters on a blue background.

Meaning		Display
Time when filter A is in operation and filter B is on standby.	→	Time of day A 12:31
Time when filter B is in operation and filter A is on standby.	→	Time of day B 15:49
The residual amount of soft water still available in filter A operating cycle	→	Remaining capacity A 5.40m ³
Duration until a regeneration is forcibly triggered, if – depending on the quantity – no regeneration is triggered during this time.	→	Days to regeneration A 3
Current flow rate in l/min.	→	Flow rate B 4 l/m

6.1.2 Parameter setting

The setting

- of cycles (regeneration process) and
- parameters

is a necessary prerequisite for the correct operation of the system. The control unit is preset ex-works to match the size. Check all settings and use the corresponding size-specific tables in the appendix. These tables contain all the values to be set, including the quick setting from section 1.1.

6.3 Regeneration

6.3.1 Triggering immediate regeneration

Press the „REGEN“ button for at least 5 seconds.

The control unit sets the currently operational valve at the various backwash cycles in accordance with the current flow rate display. It is possible to switch to the next cycle during regeneration by briefly pressing the „REGEN“ button. After all cycles have been completed, the valve returns to the operating state.

6.3.2 Regeneration indicators

Regeneration indicators appear in black text on a red background and only when a regeneration is in progress. Information on cycle steps only appears while the relevant cycle step is being executed.

Meaning		Display
Display of the remaining cycle time for backwashing	→	Backwash 3:37 min.
Display of the remaining cycle time for salting/slow washing	→	Salting 62:45 min.
Display of the remaining cycle time for quick washing	→	Quick rinse 5:10 min.
Display of the remaining cycle time for filling the brine tank	→	Fill 4:28 min.
Display of the remaining regeneration time remains on throughout the regeneration	→	Remaining regeneration time 17:12 min.
Display of the remaining cycle time for rinsing before operation	→	Flushing before operation 2:12 min.

6.4 Power failure, notifications and faults

6.4.1 Power failure

The control unit retains the settings (incl. time) in the non-volatile memory after a power failure if the battery is still charged. Otherwise, the non-rechargeable CR 2032 battery must be replaced and the time reset.

Following a longer power failure, the display flashes. This is an indication that the battery should be replaced. Even in the event of a power failure, as long as the battery is working, the regeneration steps are stored, then continued after power has been recovered.

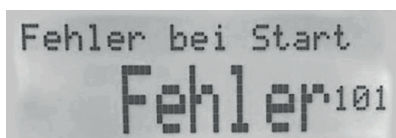
6.4.2 Notifications

In addition to the indication of the regeneration steps in the display, control unit output RLY1 is active throughout the undisturbed regeneration.

6.4.3 Faults

If the word ERROR appears together with a number in the display, the control unit is no longer working properly. If there is an internal fault in the control unit, control unit output RLY2 is active. In this case, contact the system manufacturer.

The displays are as follows:



Alternating with the contact details. Control



7. General instructions

7.1 General instructions

The use of high-quality individual components and the built-in safety and monitoring devices ensure a very high level of operational readiness.

Should a malfunction nevertheless occur, the fault can be easily identified and the cause eliminated using the fault table listed below.

If serious faults occur, contact the manufacturer (see nameplate).



WARNING!

The elimination of faults may only be carried out by qualified and instructed specialist personnel in compliance with the safety regulations in Section A of these operating instructions.

Before it is put to work, the system must be disconnected from the power supply and secured against being switched back on unintentionally.

All lines must be de-pressurised.

7.1.1 Reporting faults to the manufacturer

To ensure effective troubleshooting assistance, have the following pieces of information ready:

- Order number (if available)
- Item number (if available)
- System type
- Operating logs and maintenance logs (if available) for the last year

7.1.2 Fault indication and reporting



INSTRUCTION

Observe the corresponding instructions from section F – Control unit

In the event of an error, the control unit is programmed to react as follows:

- RLY2 alarm output is activated
- Fault indication in the display

7.2 Power failure, notifications and faults



INSTRUCTION

Please read the following table with possible faults before contacting the manufacturer's service.

Fault	Possible causes	Troubleshooting
Control unit display dark	Mains supply interrupted	Establish mains supply
	Control unit defective	Replace control unit
No soft water flow	Shut-off valve(s) in raw and/or soft water closed	Open shut-off valves
Residual hardness in soft water too high	Salt reserve too low	Refill salt and allow salt dissolving time (approx. 5 h), then trigger regeneration
	Salt supply sufficient	Trigger regeneration and check whether brine is being sucked in
	Brine is not being sucked in but brine is present	Remove and clean injector and brine valve
	Brine is not being sucked and no brine is present	The water level in the brine tank must be at least 20 mm above the salt carrier bottom between the salt tablets. Increase fill time to refill the brine tank.
Salt dissolving tank overflowing	Brine tank fill time too long	Measure the brine tank fill time and compare with the technical data.
	Brine valve defective – Float does not close valve any more.	Replace brine valve

8. Logging, Maintenance, Servicing

8.1 Testing, measuring, logging

A visual inspection (damage, leaks, etc.) must be carried out on a regular basis in order to safeguard system operation.

The following operating parameters should be checked and logged at least at specified intervals or as required:

Size/state	daily	weekly
Total hardness (raw water)	(X)	
Residual total hardness (soft water)	(X)	
Operating pressure (raw water)		X
Temperature (raw water)		X
Salt reserve in the salt dissolving tank	(X)	
Water meter status	(X)	

X – Testing, measuring (X) – Logging

8.2 Operating log

This operating log template must be copied and duplicated. The values are recorded in accordance with the specified time interval.

Operating log

System type:	
Location:	
Period:	

Date	Raw water total hardness °dH	Soft water residual total hardness °dH		Salt stock control	Water meter status in m³
		Filter 1	Filter 2		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

8.3 Maintenance

The maintenance work described below can be carried out by the manufacturer as part of a maintenance contract. The warranty is only valid if original parts are used.

8.3.1 Maintenance check-list

Work step	Work content
Additional water	The mobile measuring and testing equipment is used to determine the relevant water values, such as <ul style="list-style-type: none"> ■ Raw water hardness (°dH) ■ LF values before and after softening (µS/cm) ■ Soft water hardness (°dH) ■ Blending water hardness (°dH)
	The blending device must be checked at the set value and corrected if it deviates from the setpoint.
	Water values are entered in the maintenance log.
	Water-bearing system is inspected – as far as visible – for overall condition, algae infestation, deposits, slime infestation and corrosion. Findings are entered in the service report.
Upstream fine filter	Check the input pressure (max. 6 bar, min. 3 bar).
	Check for leaks, replace seals if necessary.*
	Check for contamination, clean or replace the filter if necessary.*
Visual inspection	Visual inspection of the salt dissolving tank for contamination. If container requires cleaning, the operator is notified.*
	Visual inspection of the salt release valves, clean if necessary.
	Visual inspection of the salt filling in the salt dissolving tank, refill from customer stock if necessary.
	Check for leaks.
Functional inspection of the mechanics and the electrical control unit	Check the program data in the control unit for the correct values.
	Correction of the programmed data or the settings on the system technology in the event of a change in the operating parameters or the raw water values. The changes are logged.
	Check the storage capability of the operating data by simulating a power cut.
	Functional inspection of the salt release valves.
	Check the fixtures of the operating and central control valves for contamination and leaks. Clean and grease parts (acid-free) if necessary. Replace any worn-out fixtures in consultation with the operator.*
Functional inspection of the filters	Check the lines on both filters to ensure they are working properly: <ul style="list-style-type: none"> ■ Backwash ■ Brine suction ■ Slow wash ■ Quick wash ■ Refilling the brine tank with water ■ Bypasses ■ Water meter or turbine meter (contact sequence) If maintenance is carried out immediately after a regeneration, the functional inspection must be carried out by means of a quick run.
Functional inspection of the remaining system periphery	Check the shut-off valve

8.3.2 Maintenance log

After the work has been completed, the operator is informed of the maintenance result in the form of a report. In particular, this refers to deviations from the setpoint or changes that have been made in order to restore a safe operating state of the system.

8.3.3 Recommendations

To ensure optimal performance, we recommend changing the resin every 7 years.*

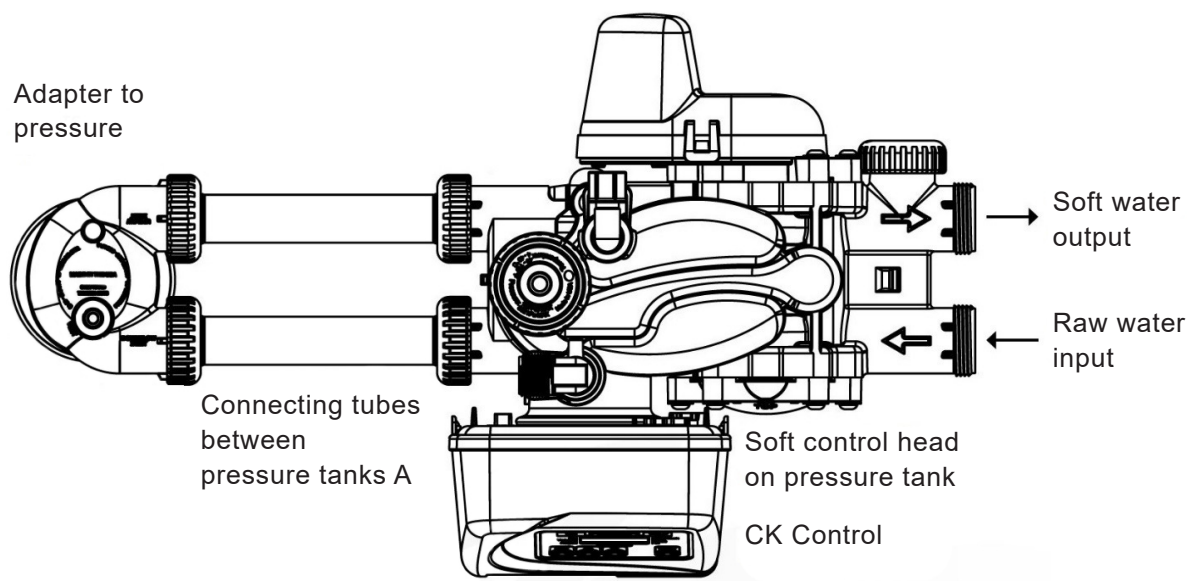
To ensure that the system is operated hygienically, we recommend disinfecting the resin during each decommissioning as well as each recommissioning.*

*Additional work not included in the maintenance and carried out and invoiced in consultation with the operator.

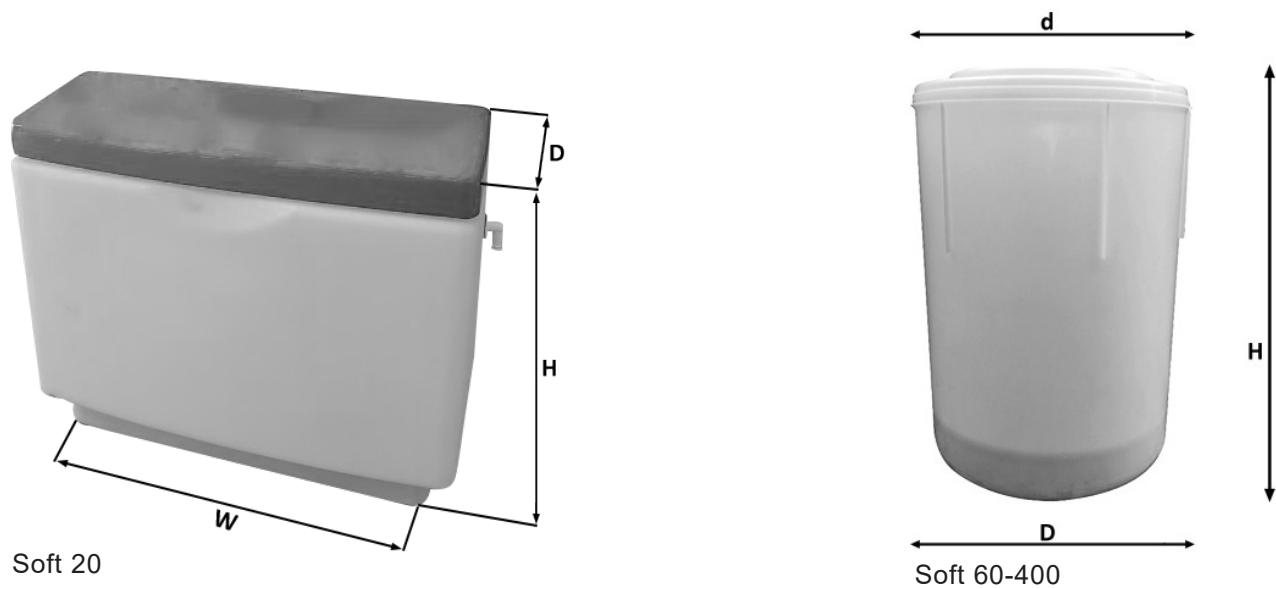
The replacement of defective parts is carried out in consultation with the operator. Spare and wear parts will be charged for separately.

9. Appendix

9.1 Soft control head

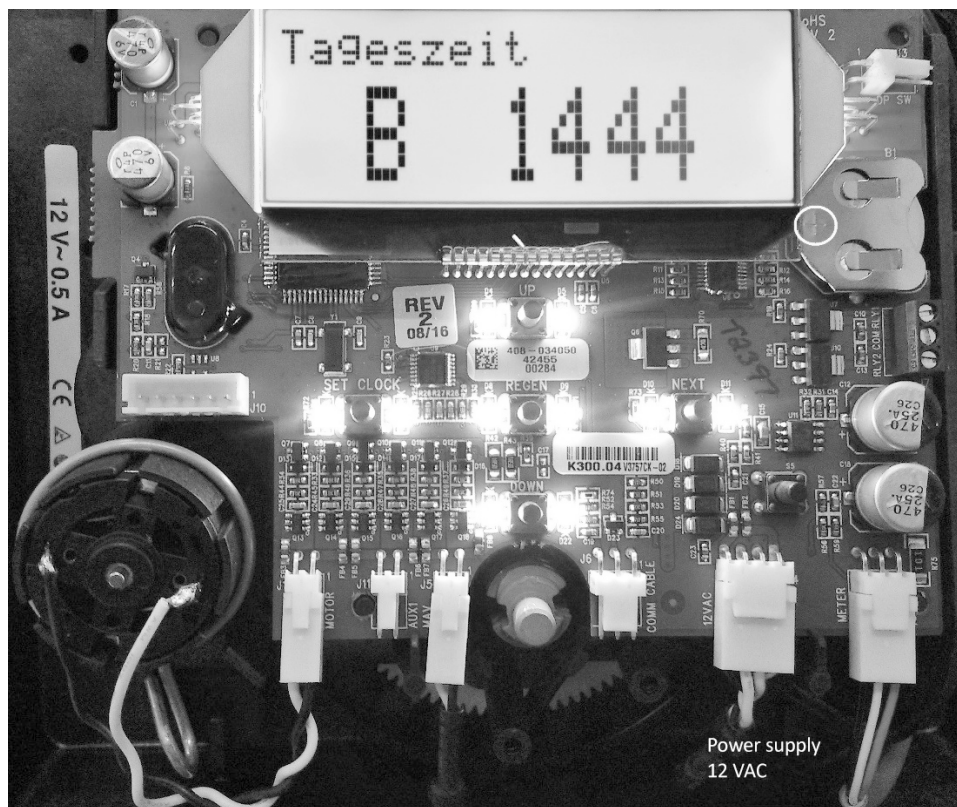


9.2 Brine tank dimensions



Size		20	60	120	200	320	400
Volume	l	100	100	100	200	200	300
Diameter	mm	W 560 x D 400	487	487	550	550	710
Height H	mm	450	665	665	1035	1035	1085

9.3 Electrical connection



Motor

Switching valve

Water meter

Battery B1 - 3V
Type Lithium Ion
CR2032
+ up

- RLY1
+ COM 12 VDC, max. 100 m
- RLY2

9.4 Soft control unit setting value

9.4.1 Soft 20 – Size adjustment

Caution: Contents in italics are continuous text.
Holding ▼ or ▲ will fast forward.
Letters A and B indicate the filter in operation.

Cycle setting

Step	Operation		Display content
	Starting point, if German does not appear as language, otherwise continue with step 4:		TIME OF DAY (for example) A 7:30
01	NEXT + ▲ press together and hold briefly	→	ENGLISH SET DISPLAY
02	▼ or ▲	→	German Set Language
03	Confirm with CLOCK	→	Time of day (for example) A 7:30
	Starting point, if German appears as language:		Time of day A 7:30
04	NEXT + ▼ min. 5 s Press and hold together	→	Softener Set Type
05	NEXT + ▼ min. 5 s Press and hold together	→	Valve nominal size Set 1.0T
06	NEXT + ▼ or ▲	→	Rinsing before commissioning Set 3 min.
07	NEXT + ▼ or ▲	→	Off Set Aux MAV
08	NEXT + ▼ or ▲	→	Auxiliary input Set Off
09	NEXT + ▼ or ▲	→	Hardness measuring unit Set °dH
10	NEXT + ▼ or ▲	→	Backwash Set Cycle1
11	NEXT + ▼ or ▲	→	Salting DN Set Cycle2
12	NEXT + ▼ or ▲	→	Quick rinse Set Cycle3
13	NEXT + ▼ or ▲	→	Fill Set Cycle4
14	NEXT + ▼ or ▲	→	End Set Cycle5
15	NEXT	→	Time of day (for example) A 7:31

Quick setting

Step	Operation		Display content
01	Starting point		Time of day (for example) A 7:35
02	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
03	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 8:40
04	NEXT	→	Time of day (for example) A 8:40
05	NEXT + ▲ together Press down briefly	→	German Set Language
06	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20 °dH
07	NEXT + ▼ or ▲	→	Residual hardness Set 0 °dH
08	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
09	NEXT	→	Time of day (for example) A 8:41

Parameter setting

Step	Operation		Display content
	Starting point		Time of day A 8:41
10	NEXT + ▼ min. 5 s Press and hold together Set with ▼ or ▲	→	Softener Set Type
11	NEXT + ▼ or ▲	→	Duration of backwash Set 2:00 min.
12	NEXT + ▼ or ▲	→	Duration of Salting DN Set 20:00 min.
13	NEXT + ▼ or ▲	→	Duration of quick rinse Set 3:00 min.
14	NEXT + ▼ or ▲	→	Filling quantity Set 3.00 kg
15	NEXT + ▼ or ▲	→	Softener capacity Set 16 m³ °dH
16	NEXT + ▼ or ▲	→	m³ capacity Set Auto
17	NEXT + ▼ or ▲	→	Immediate regeneration Set Type

Step	Operation		Display content
18	NEXT + ▼ or ▲		Time Set Relay1
19	NEXT + ▼ or ▲	→	Relay1 setpoint Set 0 min.
20	NEXT + ▼ or ▲	→	Relay1 duration Set 26 min.
21	NEXT + ▼ or ▲	→	Error Set Relay2
22	NEXT + ▼ or ▲	→	Schedule Service Set Time
23	NEXT + ▼ or ▲	→	Service interval Set 1.00 a
24	NEXT	→	Service interval in accordance with schedule 1.00 a
25	NEXT	→	Time of day (for example) A 7:30

9.4 Soft control unit setting value

9.4.2 Soft 60 – Size adjustment

Caution: Contents in italics are continuous text.

Holding ▼ or ▲ will fast forward.

Letters A and B indicate the filter in operation.

Cycle setting

Step	Operation		Display content
	Starting point, if German does not appear as language, otherwise continue with step 4:		TIME OF DAY (for example) A 7:30
01	NEXT + ▲ press together and hold briefly	→	ENGLISH SET DISPLAY
02	▼ or ▲	→	German Set Language
03	Confirm with CLOCK	→	Time of day (for example) A 7:30
	Starting point, if German appears as language:		Time of day A 7:30
04	NEXT + ▼ min. 5 s Press and hold together	→	Softener Set Type
05	NEXT + ▼ min. 5 s Press and hold together	→	Valve nominal size Set 1.0T
06	NEXT + ▼ or ▲	→	Rinsing before commissioning Set 3 min.
07	NEXT + ▼ or ▲	→	Off Set Aux MAV
08	NEXT + ▼ or ▲	→	Auxiliary input Set Off
09	NEXT + ▼ or ▲	→	Hardness measuring unit Set °dH
10	NEXT + ▼ or ▲	→	Backwash Set Cycle1
11	NEXT + ▼ or ▲	→	Salting DN Set Cycle2
12	NEXT + ▼ or ▲	→	Quick rinse Set Cycle3
13	NEXT + ▼ or ▲	→	Fill Set Cycle4
14	NEXT + ▼ or ▲	→	End Set Cycle5
15	NEXT	→	Time of day (for example) A 7:31

Quick setting

Step	Operation		Display content
01	Starting point		Time of day (for example) A 7:35
02	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
03	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 8:40
04	NEXT	→	Time of day (for example) A 8:40
05	NEXT + ▲ together Press down briefly	→	German Set Language
06	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20 °dH
07	NEXT + ▼ or ▲	→	Residual hardness Set 0 °dH
08	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
09	NEXT	→	Time of day (for example) A 8:41

Parameter setting

Step	Operation		Display content
	Starting point		Time of day A 8:41
10	NEXT + ▼ min. 5 s Press and hold together Set with ▼ or ▲	→	Softener Set Type
11	NEXT + ▼ or ▲	→	Duration of backwash Set 5:00 min.
12	NEXT + ▼ or ▲	→	Duration of Salting DN Set 35:00 min.
13	NEXT + ▼ or ▲	→	Duration of quick rinse Set 8:00 min.
14	NEXT + ▼ or ▲	→	Filling quantity Set 3.00 kg
15	NEXT + ▼ or ▲	→	Softener capacity Set 56 m³ °dH
16	NEXT + ▼ or ▲	→	m³ capacity Set Auto
17	NEXT + ▼ or ▲	→	Immediate regeneration Set Type

Step	Operation		Display content
18	NEXT + ▼ or ▲		Time Set Relay1
19	NEXT + ▼ or ▲	→	Relay1 setpoint Set 0 min.
20	NEXT + ▼ or ▲	→	Relay1 duration Set 52 min.
21	NEXT + ▼ or ▲	→	Error Set Relay2
22	NEXT + ▼ or ▲	→	Schedule Service Set Time
23	NEXT + ▼ or ▲	→	Service interval Set 1.00 a
24	NEXT	→	Service interval in accordance with schedule 1.00 a
25	NEXT	→	Time of day (for example) A 7:30

9.4.3 Soft 120 – Size adjustment

Caution: Contents in italics are continuous text.
Holding ▼ or ▲ will fast forward.
Letters A and B indicate the filter in operation.

Cycle setting

Step	Operation		Display content
	Starting point, if German does not appear as language, otherwise continue with step 4:		TIME OF DAY (for example) A 7:30
01	NEXT + ▲ press together and hold briefly	→	ENGLISH Set DISPLAY
02	▼ or ▲	→	German Set Language
03	Confirm with CLOCK	→	Time of day (for example) A 7:30
	Starting point, if German appears as language:		Time of day A 7:30
04	NEXT + ▼ min. 5 s Press and hold together	→	Softener Set Type
05	NEXT + ▼ min. 5 s Press and hold together	→	Valve nominal size Set 1.0T
06	NEXT + ▼ or ▲	→	Rinsing before commissioning Set 3 min.
07	NEXT + ▼ or ▲	→	Off Set Aux MAV
08	NEXT + ▼ or ▲	→	Auxiliary input Set Off
09	NEXT + ▼ or ▲	→	Hardness measuring unit Set °dH
10	NEXT + ▼ or ▲	→	Backwash Set Cycle1
11	NEXT + ▼ or ▲	→	Salting DN Set Cycle2
12	NEXT + ▼ or ▲	→	Quick rinse Set Cycle3
13	NEXT + ▼ or ▲	→	Fill Set Cycle4
14	NEXT + ▼ or ▲	→	End Set Cycle5
15	NEXT	→	Time of day (for example) A 7:31

Quick setting

Step	Operation		Display content
01	Starting point		Time of day A 7:35
02	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
03	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 8:40
04	NEXT	→	Time of day (for example) A 8:40
05	NEXT + ▲ together Press down briefly	→	German Set Language
06	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20 °dH
07	NEXT + ▼ or ▲	→	Residual hardness Set 0 °dH
08	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
09	NEXT	→	Time of day (for example) A 8:41

Parameter setting

Step	Operation		Display content
	Starting point		Time of day A 8:41
10	NEXT + ▼ min. 5 s Press and hold together Set with ▼ or ▲	→	Softener Set Type
11	NEXT + ▼ or ▲	→	Duration of backwash Set 4:00 min.
12	NEXT + ▼ or ▲	→	Duration of Salting DN Set 35:00 min.
13	NEXT + ▼ or ▲	→	Duration of quick rinse Set 7:00 min.
14	NEXT + ▼ or ▲	→	Filling quantity Set 6.00 kg
15	NEXT + ▼ or ▲	→	Softener capacity Set 109 m³ °dH
16	NEXT + ▼ or ▲	→	m³ capacity Set Auto
17	NEXT + ▼ or ▲	→	Immediate regeneration Set Type

Step	Operation		Display content
18	NEXT + ▼ or ▲		Time Set Relay1
19	NEXT + ▼ or ▲	→	Relay1 setpoint Set 0 min.
20	NEXT + ▼ or ▲	→	Relay1 duration Set 57 min.
21	NEXT + ▼ or ▲	→	Error Set Relay2
22	NEXT + ▼ or ▲	→	Schedule Service Set Time
23	NEXT + ▼ or ▲	→	Service interval Set 1.00 a
24	NEXT	→	Service interval in accordance with schedule 1.00 a
25	NEXT + ▼ or ▲	→	Salt level Set Off
26	NEXT	→	Time of day (for example) A 7:30

Caution: Contents in italics are continuous text.

Holding ▼ or ▲ will fast forward.

Letters A and B indicate the filter in operation.

Cycle setting

Step	Operation		Display content
	Starting point, if German does not appear as language, otherwise continue with step 4:		TIME OF DAY (for example) A 7:30
01	NEXT + ▲ press together and hold briefly	→	ENGLISH SET DISPLAY
02	▼ or ▲	→	German Set Language
03	Confirm with CLOCK	→	Time of day (for example) A 7:30
	Starting point, if German appears as language:		Time of day A 7:30
04	NEXT + ▼ min. 5 s Press and hold together	→	Softener Set Type
05	NEXT + ▼ min. 5 s Press and hold together	→	Valve nominal size Set 1.0T
06	NEXT + ▼ or ▲	→	Rinsing before commissioning Set 3 min.
07	NEXT + ▼ or ▲	→	Off Set Aux MAV
08	NEXT + ▼ or ▲	→	Auxiliary input Set Off
09	NEXT + ▼ or ▲	→	Hardness measuring unit Set °dH
10	NEXT + ▼ or ▲	→	Backwash Set Cycle1
11	NEXT + ▼ or ▲	→	Salting DN Set Cycle2
12	NEXT + ▼ or ▲	→	Quick rinse Set Cycle3
13	NEXT + ▼ or ▲	→	Fill Set Cycle4
14	NEXT + ▼ or ▲	→	End Set Cycle5
15	NEXT	→	Time of day (for example) A 7:31

Quick setting

Step	Operation		Display content
01	Starting point		Time of day (for example) A 7:35
02	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
03	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 8:40
04	NEXT	→	Time of day (for example) A 8:40
05	NEXT + ▲ together Press down briefly	→	German Set Language
06	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20 °dH
07	NEXT + ▼ or ▲	→	Residual hardness Set 0 °dH
08	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
09	NEXT	→	Time of day (for example) A 8:41

Parameter setting

Step	Operation		Display content
	Starting point		Time of day A 8:41
10	NEXT + ▼ min. 5 s Press and hold together Set with ▼ or ▲	→	Softener Set Type
11	NEXT + ▼ or ▲	→	Duration of backwash Set 5:00 min.
12	NEXT + ▼ or ▲	→	Duration of Salting DN Set 58:00 min.
13	NEXT + ▼ or ▲	→	Duration of quick rinse Set 8:00 min.
14	NEXT + ▼ or ▲	→	Filling quantity Set 10.00 kg
15	NEXT + ▼ or ▲	→	Softener capacity Set 182 m³ °dH
16	NEXT + ▼ or ▲	→	m³ capacity Set Auto
17	NEXT + ▼ or ▲	→	Immediate regeneration Set Type

Step	Operation		Display content
18	NEXT + ▼ or ▲		Time Set Relay1
19	NEXT + ▼ or ▲	→	Relay1 setpoint Set 0 min.
20	NEXT + ▼ or ▲	→	Relay1 duration Set 87 min.
21	NEXT + ▼ or ▲	→	Error Set Relay2
22	NEXT + ▼ or ▲	→	Schedule Service Set Time
23	NEXT + ▼ or ▲	→	Service interval Set 1.00 a
24	NEXT	→	Service interval in accordance with schedule 1.00 a
25	NEXT	→	Time of day (for example) A 7:30

9.4.5 Soft 320 – Size adjustment

Caution: Contents in italics are continuous text.
Holding ▼ or ▲ will fast forward.
Letters A and B indicate the filter in operation.

Cycle setting

Step	Operation		Display content
	Starting point, if German does not appear as language, otherwise continue with step 4:		TIME OF DAY (for example) A 7:30
01	NEXT + ▲ press together and hold briefly	→	ENGLISH Set DISPLAY
02	▼ or ▲	→	German Set Language
03	Confirm with CLOCK	→	Time of day (for example) A 7:30
	Starting point, if German appears as language:		Time of day A 7:30
04	NEXT + ▼ min. 5 s Press and hold together	→	Softener Set Type
05	NEXT + ▼ min. 5 s Press and hold together	→	Valve nominal size Set 1.0T
06	NEXT + ▼ or ▲	→	Rinsing before commissioning Set 5 min.
07	NEXT + ▼ or ▲	→	Off Set Aux MAV
08	NEXT + ▼ or ▲	→	Auxiliary input Set Off
09	NEXT + ▼ or ▲	→	Hardness measuring unit Set °dH
10	NEXT + ▼ or ▲	→	Backwash Set Cycle1
11	NEXT + ▼ or ▲	→	Salting DN Set Cycle2
12	NEXT + ▼ or ▲	→	Quick rinse Set Cycle3
13	NEXT + ▼ or ▲	→	Fill Set Cycle4
14	NEXT + ▼ or ▲	→	End Set Cycle5
15	NEXT	→	Time of day (for example) A 7:31

Quick setting

Step	Operation		Display content
01	Starting point		Time of day A 7:35
02	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
03	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 8:40
04	NEXT	→	Time of day (for example) A 8:40
05	NEXT + ▲ together Press down briefly	→	German Set Language
06	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20 °dH
07	NEXT + ▼ or ▲	→	Residual hardness Set 0 °dH
08	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
09	NEXT	→	Time of day (for example) A 8:41

Parameter setting

Step	Operation		Display content
	Starting point		Time of day A 8:41
10	NEXT + ▼ min. 5 s Press and hold together Set with ▼ or ▲	→	Softener Set Type
11	NEXT + ▼ or ▲	→	Duration of backwash Set 8:00 min.
12	NEXT + ▼ or ▲	→	Duration of Salting DN Set 61:00 min.
13	NEXT + ▼ or ▲	→	Duration of quick rinse Set 13:00 min.
14	NEXT + ▼ or ▲	→	Filling quantity Set 16.00 kg
15	NEXT + ▼ or ▲	→	Softener capacity Set 298 m³ °dH
16	NEXT + ▼ or ▲	→	m³ capacity Set Auto
17	NEXT + ▼ or ▲	→	Immediate regeneration Set Type

Step	Operation		Display content
18	NEXT + ▼ or ▲		Time Set Relay1
19	NEXT + ▼ or ▲	→	Relay1 setpoint Set 0 min.
20	NEXT + ▼ or ▲	→	Relay1 duration Set 95 min.
21	NEXT + ▼ or ▲	→	Error Set Relay2
22	NEXT + ▼ or ▲	→	Schedule Service Set Time
23	NEXT + ▼ or ▲	→	Service interval Set 1.00 a
24	NEXT	→	Service interval in accordance with schedule 1.00 a
25	NEXT	→	Time of day (for example) A 7:30

Caution: Contents in italics are continuous text.

Holding ▼ or ▲ will fast forward.

Letters A and B indicate the filter in operation.

Cycle setting

Step	Operation		Display content
	Starting point, if German does not appear as language, otherwise continue with step 4:		TIME OF DAY (for example) A 7:30
01	NEXT + ▲ press together and hold briefly	→	ENGLISH SET DISPLAY
02	▼ or ▲	→	German Set Language
03	Confirm with CLOCK	→	Time of day (for example) A 7:30
	Starting point, if German appears as language:		Time of day A 7:30
04	NEXT + ▼ min. 5 s Press and hold together	→	Softener Set Type
05	NEXT + ▼ min. 5 s Press and hold together	→	Valve nominal size Set 1.0T
06	NEXT + ▼ or ▲	→	Rinsing before commissioning Set 5 min.
07	NEXT + ▼ or ▲	→	Off Set Aux MAV
08	NEXT + ▼ or ▲	→	Auxiliary input Set Off
09	NEXT + ▼ or ▲	→	Hardness measuring unit Set °dH
10	NEXT + ▼ or ▲	→	Backwash Set Cycle1
11	NEXT + ▼ or ▲	→	Salting DN Set Cycle2
12	NEXT + ▼ or ▲	→	Quick rinse Set Cycle3
13	NEXT + ▼ or ▲	→	Fill Set Cycle4
14	NEXT + ▼ or ▲	→	End Set Cycle5
15	NEXT	→	Time of day (for example) A 7:31

Quick setting

Step	Operation		Display content
01	Starting point		Time of day A 7:35
02	Press CLOCK briefly, hour flashes Set with ▼ or ▲	→	Hour Set 8:35
03	Press NEXT briefly, minute flashes Set with ▼ or ▲	→	Hour Set 8:40
04	NEXT	→	Time of day (for example) A 8:40
05	NEXT + ▲ together Press down briefly	→	German Set Language
06	NEXT + ▼ or ▲	→	Input hardness (measured value, for example) Set 20 °dH
07	NEXT + ▼ or ▲	→	Residual hardness Set 0 °dH
08	NEXT + ▼ or ▲	→	Days between two regenerations Set 3
09	NEXT	→	Time of day (for example) A 8:41

Parameter setting

Step	Operation		Display content
	Starting point		Time of day A 8:41
10	NEXT + ▼ min. 5 s Press and hold together Set with ▼ or ▲	→	Softener Set Type
11	NEXT + ▼ or ▲	→	Duration of backwash Set 7:00 min.
12	NEXT + ▼ or ▲	→	Duration of Salting DN Set 77:00 min.
13	NEXT + ▼ or ▲	→	Duration of quick rinse Set 12:00 min.
14	NEXT + ▼ or ▲	→	Filling quantity Set 20.00 kg
15	NEXT + ▼ or ▲	→	Softener capacity Set 370 m³ °dH
16	NEXT + ▼ or ▲	→	m³ capacity Set Auto
17	NEXT + ▼ or ▲	→	Immediate regeneration Set Type

Step	Operation		Display content
18	NEXT + ▼ or ▲		Time Set Relay1
19	NEXT + ▼ or ▲	→	Relay1 setpoint Set 0 min.
20	NEXT + ▼ or ▲	→	Relay1 duration Set 113 min.
21	NEXT + ▼ or ▲	→	Error Set Relay2
22	NEXT + ▼ or ▲	→	Schedule Service Set Time
23	NEXT + ▼ or ▲	→	Service interval Set 1.00 a
24	NEXT	→	Service interval in accordance with schedule 1.00 a
25	NEXT + ▼ or ▲	→	Salt level alarm Set Off
26	NEXT	→	Time of day (for example) A 7:30

9.5 System dimensions

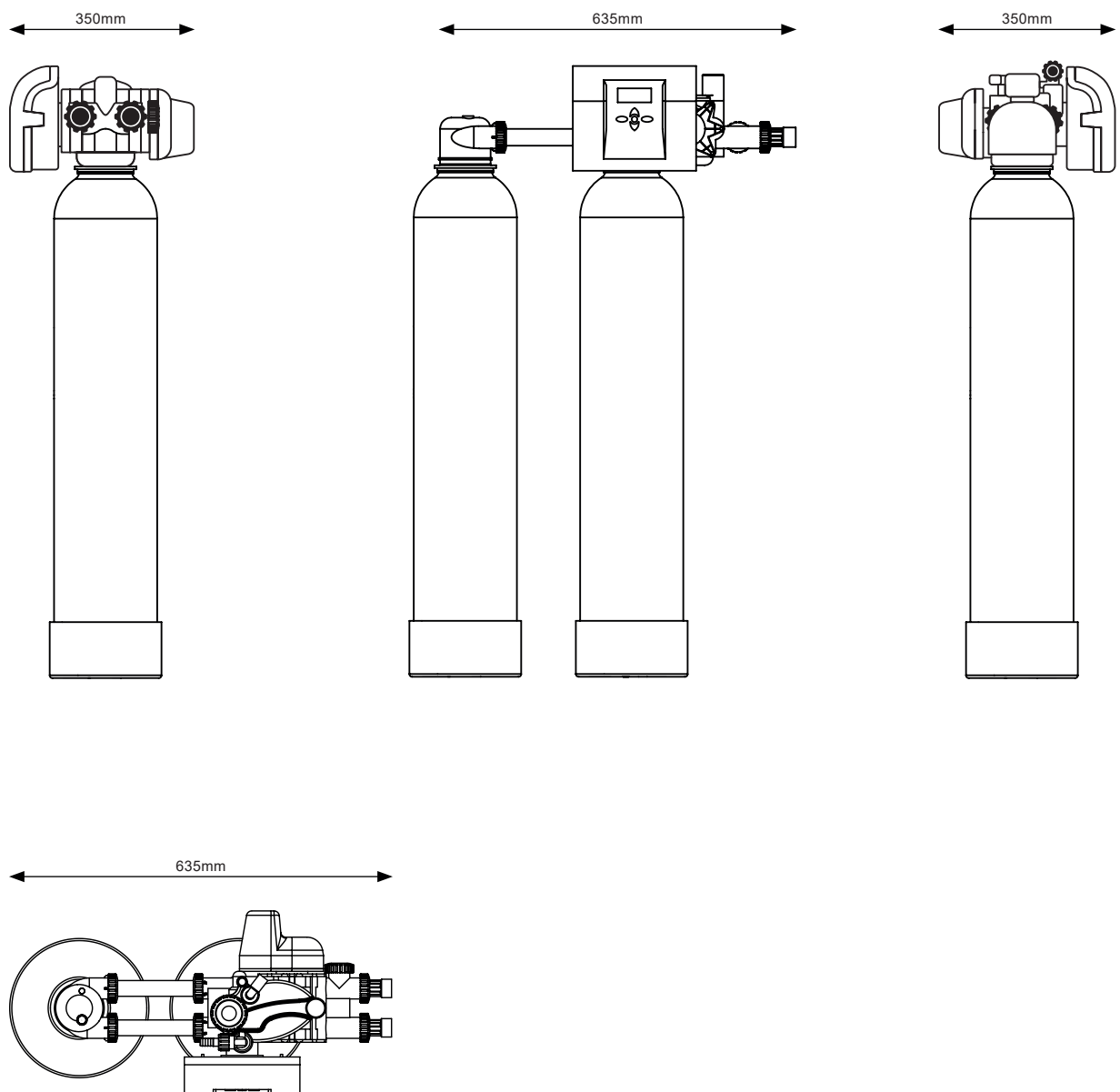


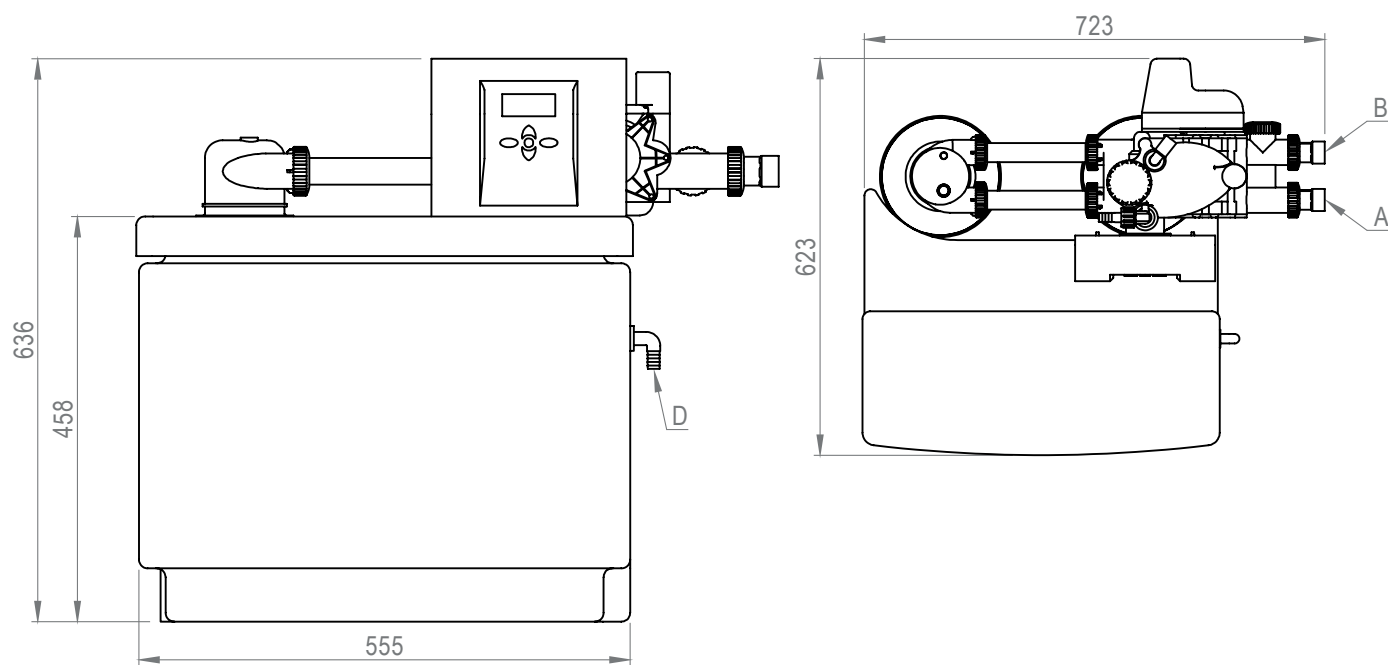
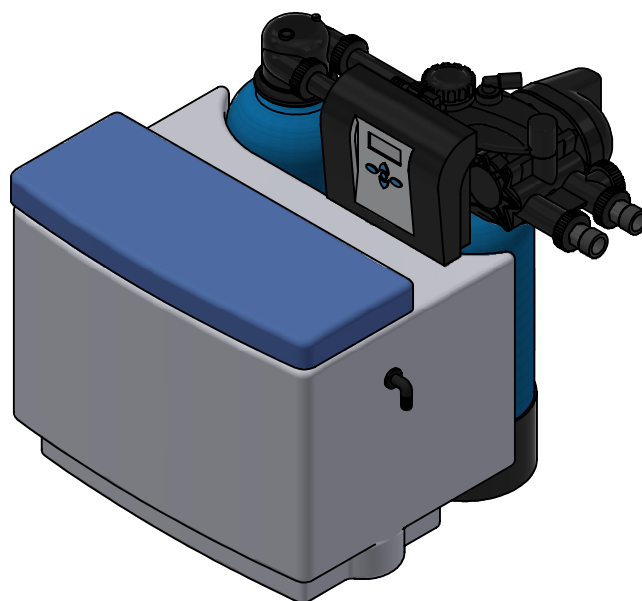
INSTRUCTION

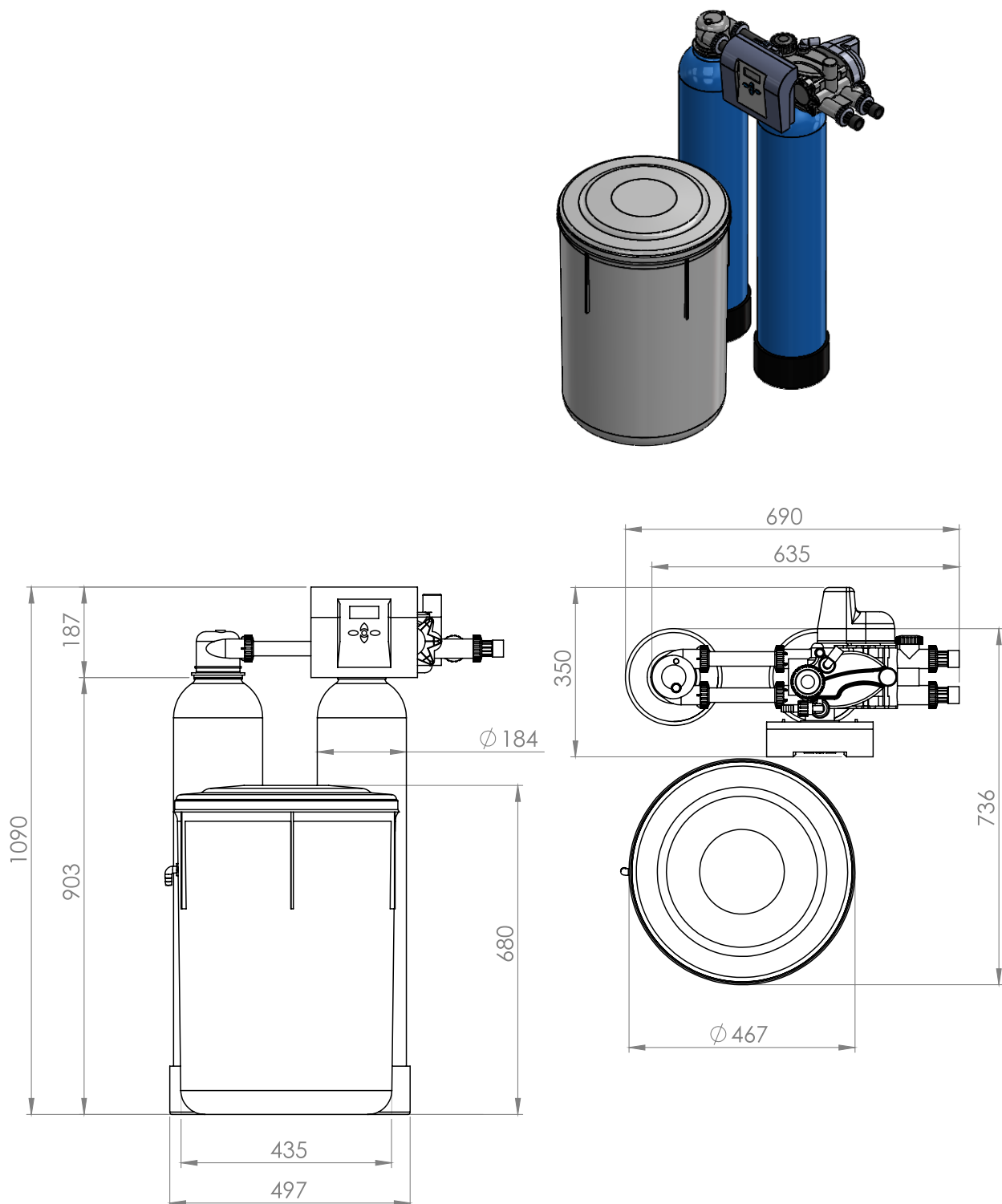
The installation surface must be level and horizontal and must have sufficient load-bearing capacity.

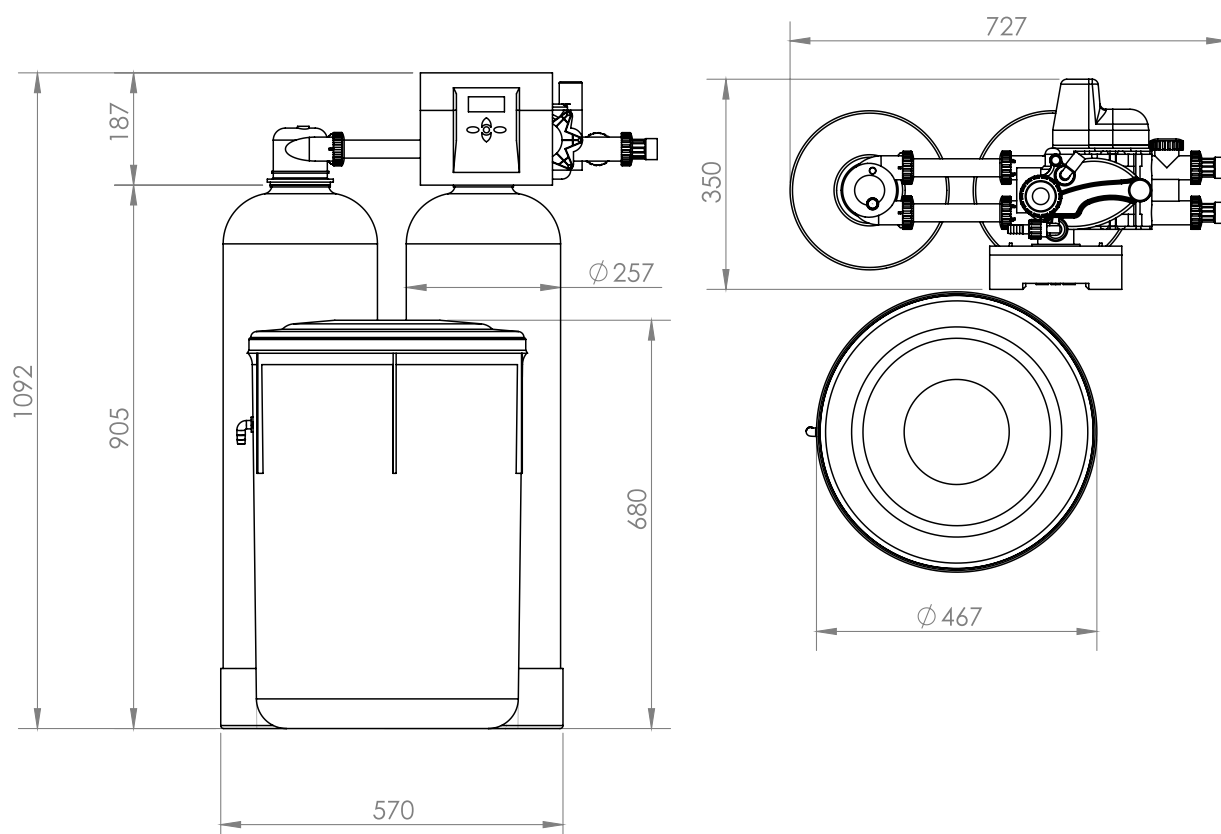
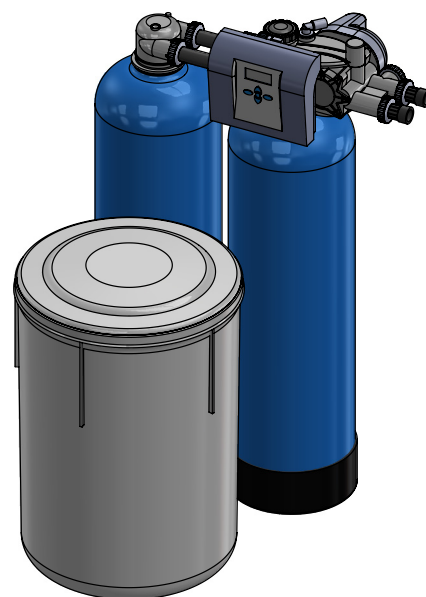
The necessary electrical connections must be available at a maximum distance of 1m from the system.

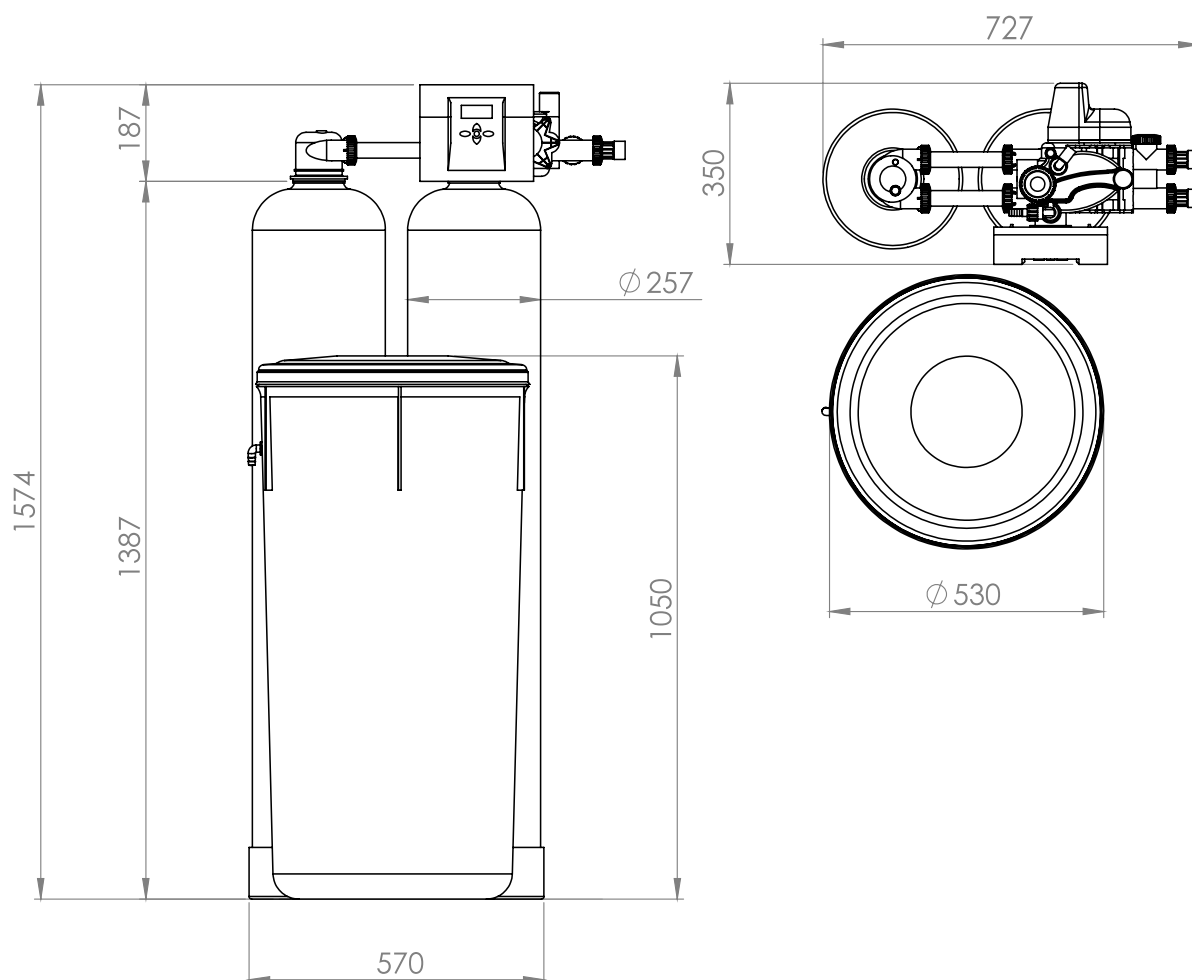
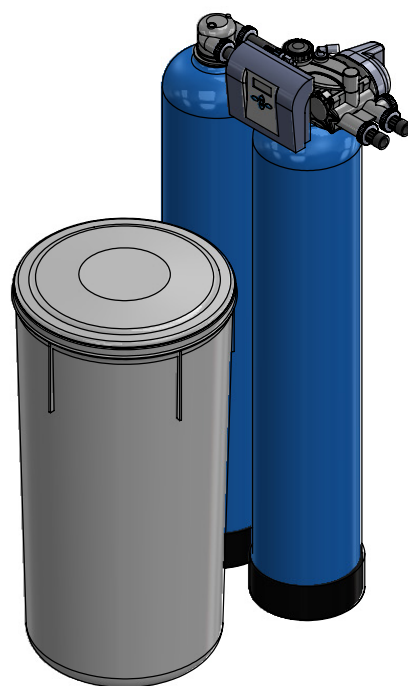
There must be sufficient clearance to allow access to the device.

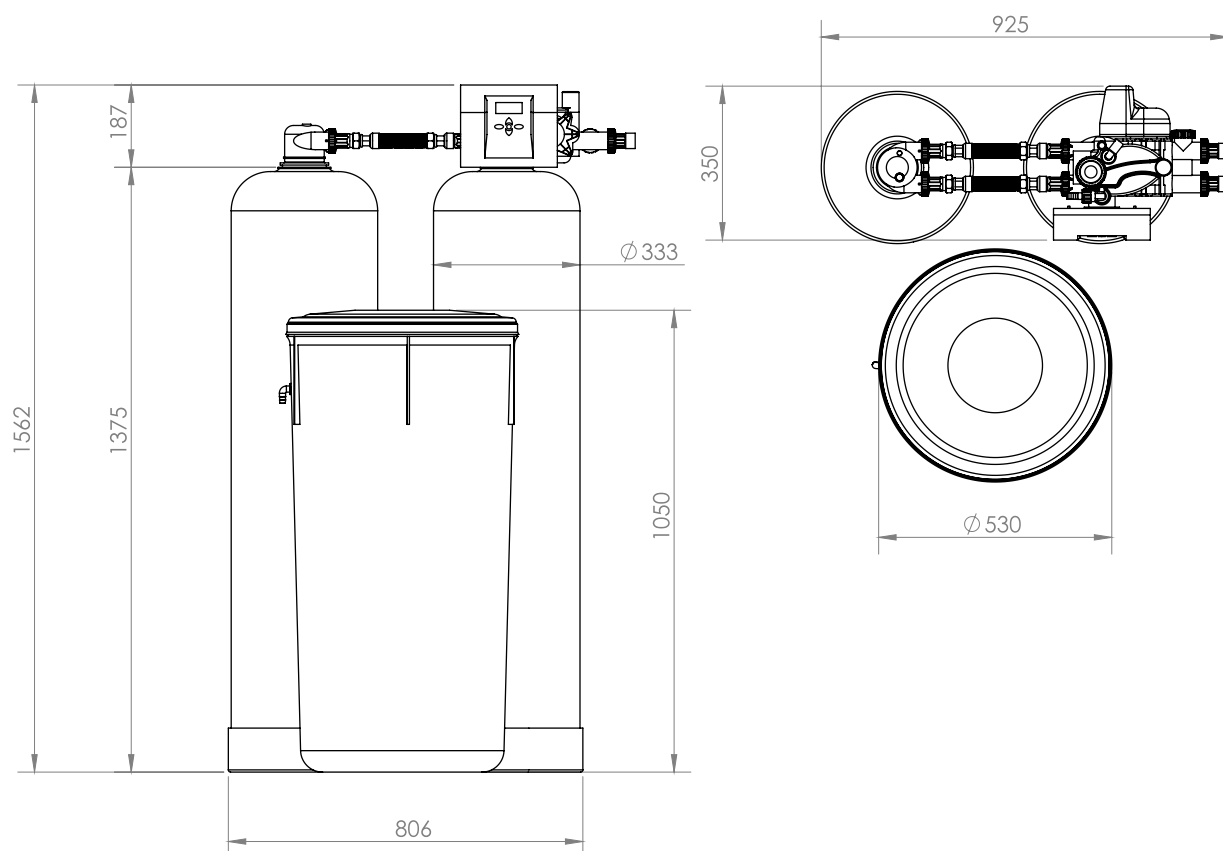
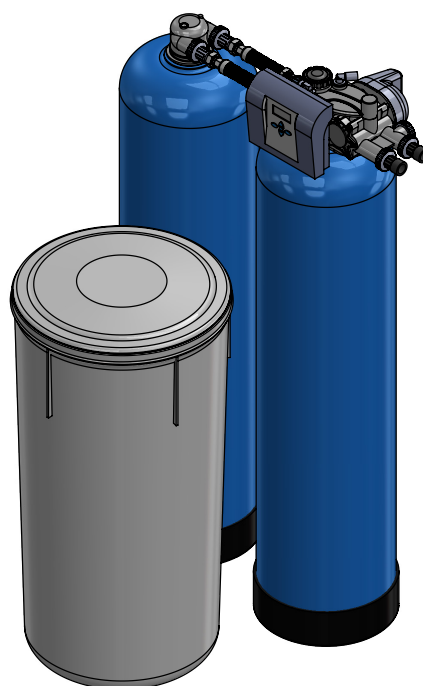


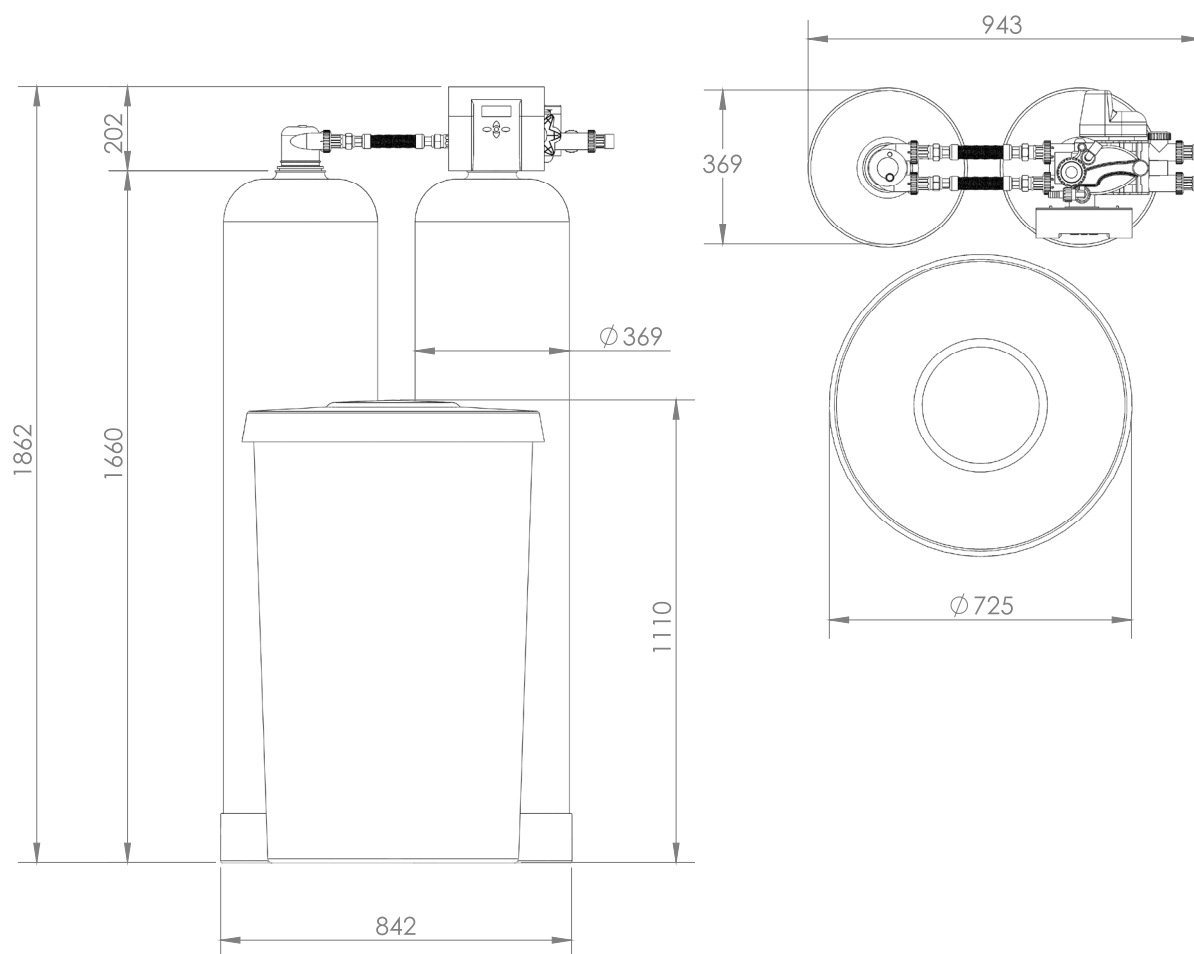
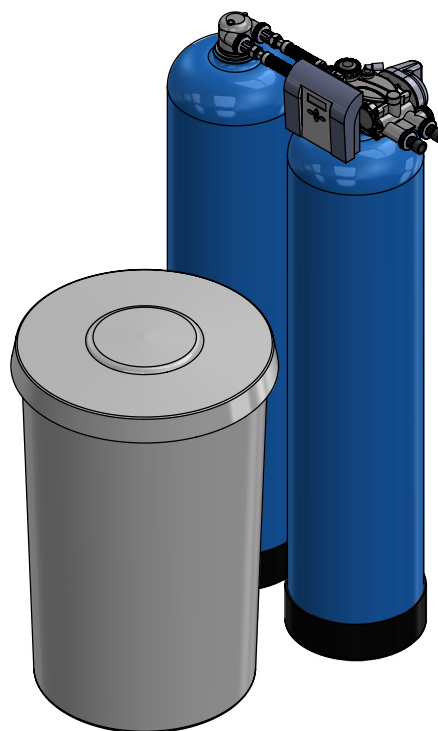




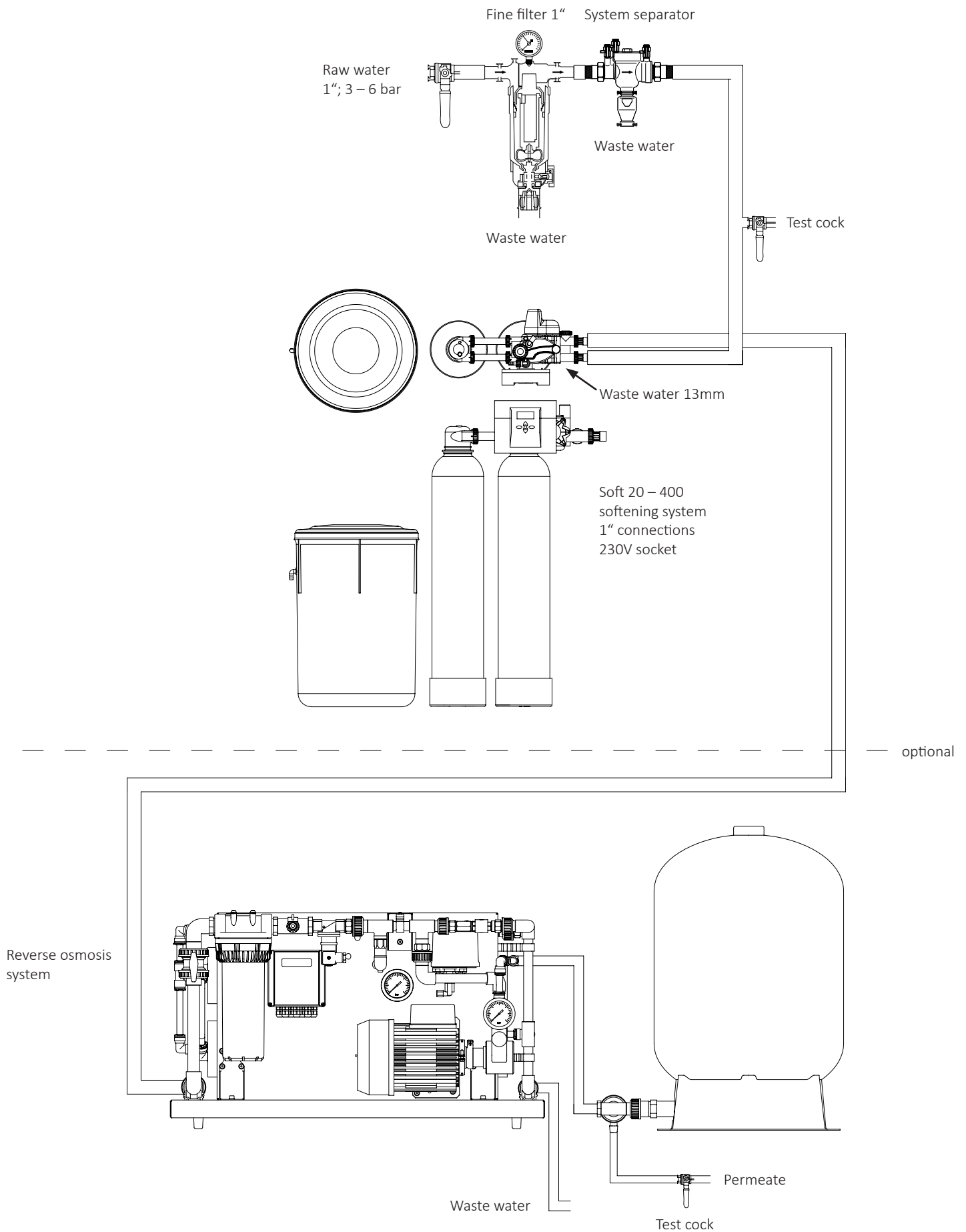


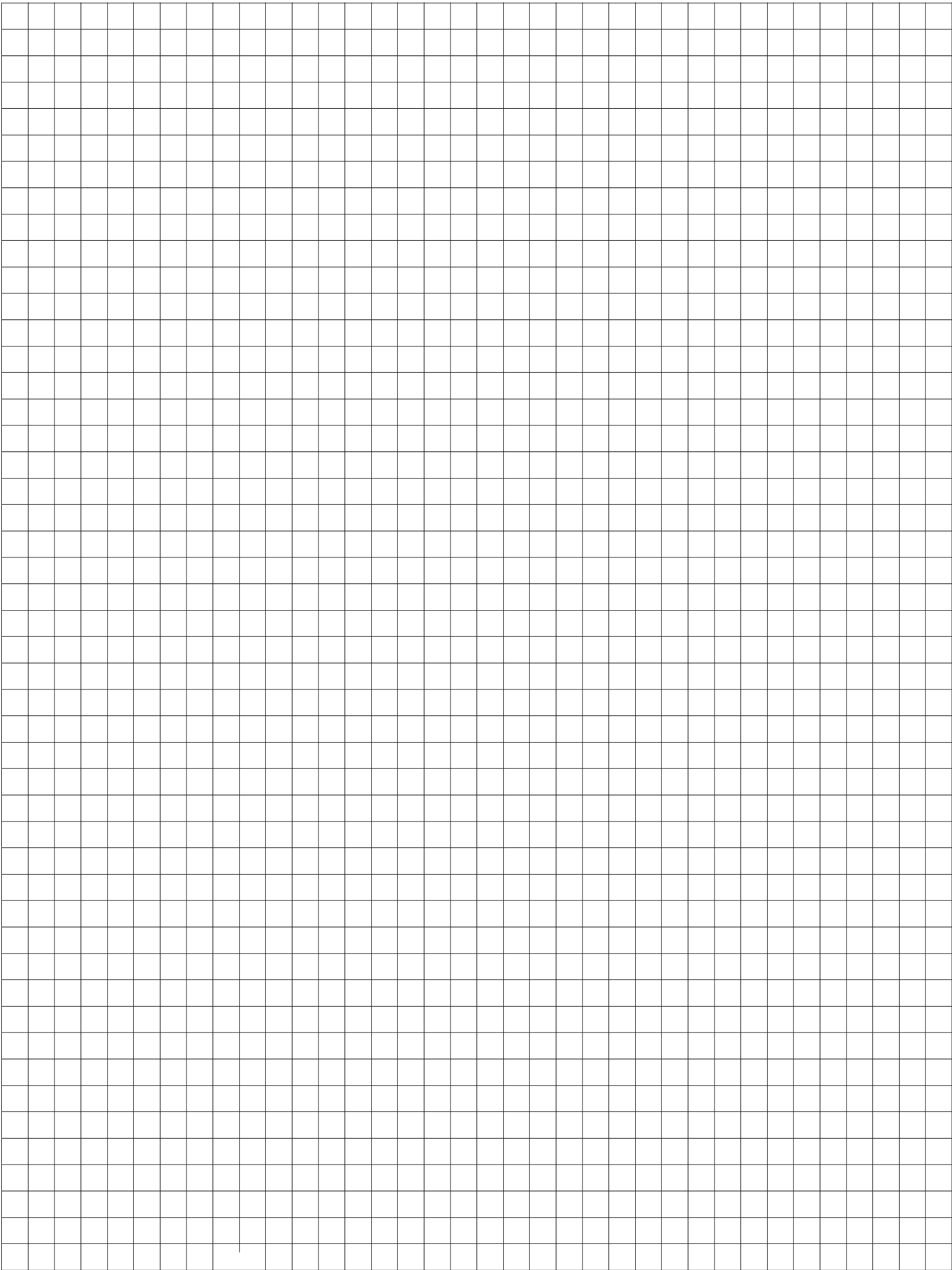


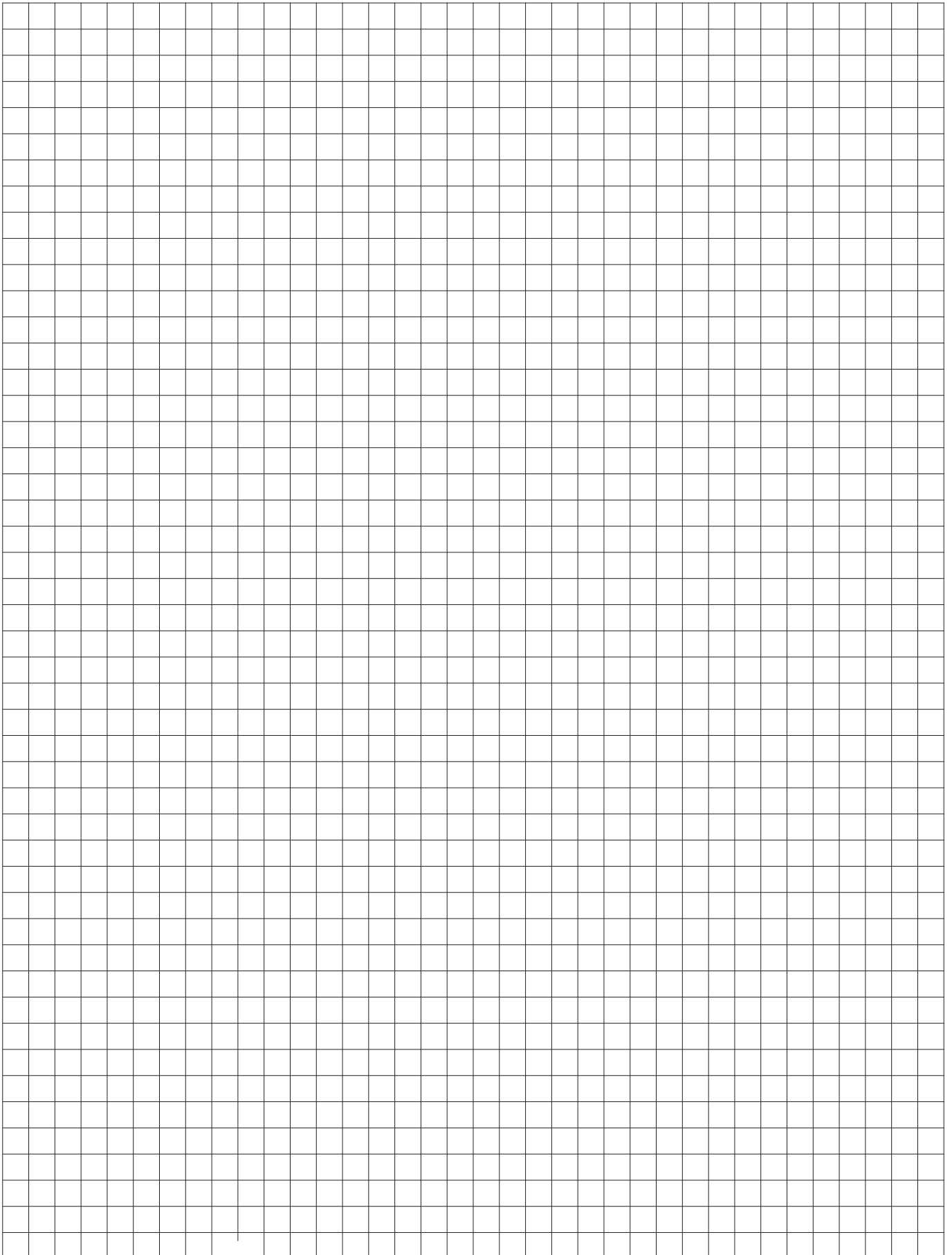




9.6 Assembly structure (diagram)







Condair GmbH

Regionalcenter **Süd**
Parkring 3
D-85748 Garching
Tel. +49 (0) 89 / 20 70 08-0

Regionalcenter **Südwest**
Zettachring 6
D-70567 Stuttgart
Tel. +49 (0) 711 / 25 29 70-0

Regionalcenter **Mitte**
Nordendstraße 2
D-64546 Mörfelden-Walldorf
Tel. +49 (0) 61 05 / 963 88-0

Regionalcenter **West**
Werftstraße 25
D-40549 Düsseldorf
Tel. +49 (0) 211 / 54 20 35-0

Regionalcenter **Nord**
Lüneburger Straße 4
D-30880 Laatzen - Rethen
Tel. +49 (0) 511 / 51 54 13 11

Regionalcenter **Ost**
Chausseestraße 88
D-10115 Berlin
Tel. +49 (0) 30 / 921 03 44 -0

Condair **Austria**
Perfektastraße 45
A-1230 Wien
Tel. +43 (0) 1 / 60 33 111-0