

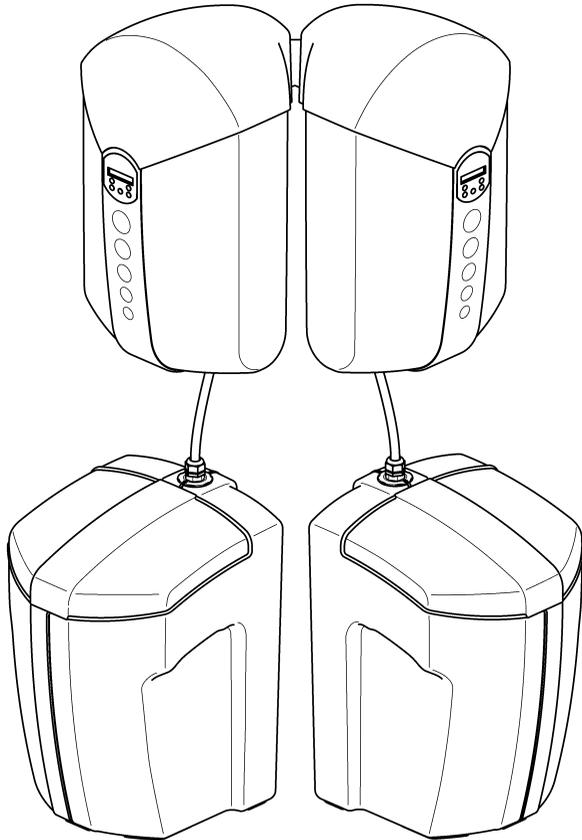
Installation and operating instructions

JUDO QUICKSOFT MEGA 4

Water softening unit

Valid for: EU countries and Switzerland

Language: English



CE

Read before use and store!

JUDO[®]

Inquiries, orders, customer support

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Dear customer,

thank you for the confidence you have shown in us by purchasing this device. In purchasing this water softening system you have procured a state of the art device.

This device is suitable for use in cold drinking water up to a maximum water and ambient temperature of 30 °C.



The remote control of the JUDO QUICKSOFT MEGA 4 via mobile phones and tablets using the connectivity module (accessories) and the JU Control App requires a stable Internet connection at the place of installation of the water softening system.

The JU Control App is available for iOS- and Android.

Every device has been carefully checked prior to supply. Nevertheless, if difficulties occur, please contact your responsible customer service representative (see back page).

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71364 Winnenden
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EU Declaration of Conformity

Document no. 481/08.22

Manufacturer: JUDO Wasseraufbereitung GmbH

Address: Hohreuschstr. 39 - 41
D-71364 Winnenden

Product description: JUDO QUICKSOFT MEGA Water softening unit

- EU Directive: Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) 2011/65/EU
- EU Directive: Electromagnetic compatibility (EMC) 2014/30/EU
- Harmonized Standards: Electromagnetic compatibility, generic standards for radiated interference and interference immunity EN 61000-6-2
EN 61000-6-3
- Harmonized Standard: Information technology equipment - Safety EN 60950-1

Compliance with the listed guidelines and the EMC requirements for the use of the device in the household, commercial and industrial area as well as the application of the mentioned standards is hereby confirmed.

Issuer: JUDO Wasseraufbereitung GmbH

Place and date: Winnenden, August 4th 2022

Legally binding
signature:



.....
JUDO Wasseraufbereitung GmbH

This declaration certifies that the product is in accordance with all the stated directives; it is however not an assurance of its characteristics.
The manufacturer bears sole responsibility for issuing this EU declaration of conformity.

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1 About these operating instructions

These operating instructions must always be available at the place of use of the water softening system.

These operating instructions should simplify getting to know your water softening system and inform you of its intended applications.

The operating instructions contain important information pertaining to safe, proper and efficient operation of the water softening system. They contain basic information that must be observed during installation, operation and servicing. Observance of this information will help to avoid dangers, reduce repair costs and increase the reliability and service life of the water softening system.

The operating instructions must be read by each person charged with working on the water softening system, e.g. for:

- **Installation**
- **Operation**
- **Servicing**
(maintenance, inspection, servicing)

Installation and servicing must only be performed by personnel who have been authorised by the manufacturer to do so, i.e. who are able to fulfil the instructions referred to in the installation and operating instructions as well as country-specific regulations.

Alongside the operating instructions and the legal regulations applicable in the country and place of use in respect of accident prevention, the recognised technical regulations for safe and professional work must be observed.

Therefore, these operating instructions must be read by the installer and the responsible technical personnel/operators prior to installation, commissioning and servicing.

Not only must the general safety instructions listed in chapter “Intended use” be observed, but also the specific safety instructions that are included under the other main points.

1.1 Symbols used

The safety instructions contained in these operating instructions are labelled with the following symbols:



NOTICE



Indication of existing dangers



Warning of electric voltage



Torques specified by the manufacturer



User tips and other information

Instructions attached directly to the rotary flange fitting or the water softening system, such as:

- Direction of flow
- Type label
- Cleaning information

must be observed without fail and maintained so that they are always legible.

1.2 Safety instructions and dangers due to non-observation

In particular, non-observation of the general danger symbols is associated with the following typical hazards:

- Failure of important water softening system functions.
- Endangering of persons due to electrical and mechanical effects.
- Endangering of persons and the environment due to leaks.

Any working methods that might endanger safety must be avoided.

Non-observation of these operating instructions and the safety instructions herein may endanger persons, as well as the environment and the device itself.

1.3 Units used

The following units which do not form part of the SI (Système International d'Unités) system are used:

Quantity	Unit	Conversion
Nominal diameter	1"	corresponds to DN 25
Pressure	bar	1 bar = 100000 Pa = 0.1 N/mm ² ≈ 14.5 psi
Temperature	°F	°F = °C · 1.8 + 32
Water hardness	°e	1 °e = 0.142 mmol/l Alkaline earth ions (hardness producing ions) = 14.2 ppm CaCO ₃

2 Intended use

Both installation and use of the water softening system are subject to the applicable national regulations.

Alongside the operating instructions, the legal regulations applicable in the country and place of use in respect of accident prevention, the recognised technical regulations for safe and professional work must be observed.

The water to be softened must comply with the European Drinking Water Directive!

The manufacturer/supplier must be consulted before using water of a different quality or water with additional additives!

The water softening system is suitable for use in cold drinking water up to a maximum ambient temperature of 30 °C.

It is manufactured according to the state of the art and recognised German safety regulations.

The water softening system may only be used as described in the operating instructions. Any other use or use beyond the specified use is considered to represent incorrect use.

Additional dangers exist in the event of incorrect use and in the event of non-observation of the danger symbols and safety instructions. The manufacturer/supplier shall not be responsible for any resulting damage. All risks are borne solely by the user.

Intended use includes observance of the operating instructions.

The manufacturer/supplier must be consulted before using the water softening system outside the limits of use described in these operating instructions.

The water softening system must only be used as intended in a technically fault-free state, while maintaining safety and hazard awareness, and in compliance with the operating instructions.

Ensure that malfunctions are rectified immediately!

So that the waste water can be safely drained away both during operation and also in the event of a possible system defect, the specifications given in chapter 4.1.1.1 "Requirements for the place of installation" must be closely observed!



NOTICE



(see chapter 1.2 "Safety instructions and dangers due to non-observation")

The spent regenerating salt is removed from the water softening columns together with waste water. Therefore it must not be used for irrigation or similar purposes.

The designed capacity of the water softening system is such that it is capable of partially softening the entire water requirement for a single or multiple family dwelling as well as corresponding partial water quantities for hot water, swimming pool, washing machine and dishwasher.

2.1 Water pressure

The water pressure must be between 2 bar and 7 bar.

The water pressure must not fall below 2 bar as otherwise the function can be impaired! If the water softening system is not regularly serviced, the softening function can be impaired.



NOTICE



(see chapter 1.2 "Safety instructions and dangers due to non-observation")

Where the **water pressure is greater than 7 bar**, a pressure reducer must be installed **upstream** of the water softening system (see fig. 1). If the operating pressure is greater than 7 bar, malfunctions can occur.

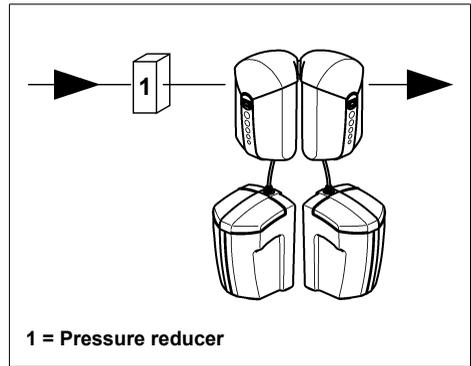


Fig. 1: Pressure reducer upstream of the system



We recommend installation of a pressure reducer for **water pressures between 5 and 7 bar**.

The optimum operating pressure for the water softening system is between 3 bar and 5 bar. This is where it operates most economically.

2.2 Indication of particular dangers

2.2.1 Electrical devices/installations



No electrical cables and equipment may be located below or in the immediate vicinity of the water softening system!

Electrical devices/installations that are not splash-proof and are located in the vicinity of the water softening system may be damaged by water that escapes during installation or in the event of incorrect use of the water softening system. If the electrical devices/installations are connected to the power supply, it is also possible that a short-circuit could occur. Should this occur there is a risk of electric shocks to people. Therefore electrical devices/furnishings and equipment in the vicinity must be splashproof and/or comply with the legal regulations for wet areas.



In the power supply unit the mains voltage is reduced to a safe low voltage of 24 V which is then used to operate the system electronics. No other power supply units must be used.



Limescale deposits block the water supply and therefore can result in increased energy consumption.



NOTICE



(see chapter 1.2 “Safety instructions and dangers due to non-observation”)

Caution when touching without the cover! During operation, electronic components can become hot. Also there is a danger due to moving parts.

Potential-free output



Only low voltages can be used for the remote transmission of the fault indication via the potential-free output!

Switching voltage..... maximum 24 V
Current maximum 1 A

(see chapter 5.8 “Potential-free fault indication”)

3.2 Materials used

The materials used are resistant to the physical, chemical and corrosive loads expected to be encountered in drinking water and fulfil the specifications required by DIN EN 14743 and DIN 19636-100 (“Water softening systems (cation exchangers) in drinking water installations”). All materials are hygienically and physiologically harmless. Plastics fulfil the KTW Guideline (Guideline for the Hygienic Assessment of Organic Materials in Contact with Drinking Water) of the German Federal Environmental Agency (UBA). Metallic materials fulfil the requirements of DIN 50930-6 (Effect of metallic materials on the quality of drinking water).

3 Product information

3.1 Application

The water softening system is suitable for use with cold drinking water having a maximum water temperature of up to 30 °C.



NOTICE



(see chapter 1.2 “Safety instructions and dangers due to non-observation”)

Usage limitations see chapter 2 “Intended use”.

This water softening system is for protection of water pipes and the water heater against limescale deposits.

With partially softened water, devices and fittings are preserved and the consumption of washing and cleaning agents reduced.

4 Installation

4.1 General

Installation must only be performed by suitably qualified technical personnel.

The chapter 2 "Intended use" must be observed without fail!

The pipe must be able to safely support the water softening system.

Otherwise mechanical damage to the pipe up to and including breakage can result. This can result in severe water damage. Should such an event occur, persons in the vicinity of the water softening system are exposed to a risk of injury or harm because of the large water volumes that could escape.

The supplied support elements are used for additional support and fixing of the pipe (see chapter 4.2.3 "Installing the support elements").

The spatial requirements of the system can be found in chapter 9.3 "Installation dimensions".

At least 300 mm clearance is required above the water softening system, so that all maintenance work can be properly performed.

4.1.1 Requirements for the place of installation



To ensure fault-free operation, observe the following requirements:

- The ambient temperature must not exceed 30 °C!
- So that it is possible to safely drain the waste water (regeneration) during operation and also in the event that a system defect occurs, the specifications given in chapter 4 "Installation" must be precisely followed!
If the waste water cannot be safely and completely drained, it is possible that

property damage to the home and furnishings may be caused by the water.

- A shut-off valve must be installed upstream and downstream of the water softening system! This allows the water supply to be disconnected for water softening system maintenance, repairs or in case of malfunction. Likewise flooding and severe water damage to household furnishings and equipment can be avoided in this way.
- The installation room must be dry and free from frost. Unauthorised persons must not be able to access the water softening system.
- The water softening system must not be subject to severe impacts.
- The device can be installed in all commercially available drinking water pipes.
- Installation of the water softening system **upstream of the** water meter is forbidden!
- Installation downstream of the protective filter as per DIN EN 13443-1 and DIN 19628.



A permanent power connection (230 V, 50 Hz) must be available.

4.1.2 Installation position



Always install the water softening system in an upright position ($\pm 5^\circ$)! If this is not observed, incorrect functioning may result.

4.1.3 Power supply



A splash-proof socket, complying with the legal regulations for wet areas, is required for the power supply unit.

The mains voltage must not be interrupted (e.g. via a light switch).

If the water softening system does not have a permanent power connection,

- Regeneration will not take place,
- No fault warnings will be output.
- Water leakage or even water damage may occur during a regeneration as a result of a loss of power.

4.2 Installation of the water softening system

The two individual softeners are connected to the pipe via the parallel connection flange (JQT). The spatial requirements of the system can be found in chapter 9.3 "Installation dimensions".

A rotary flange fitting (JQE) is included within the scope of supply of the parallel connection flange (JQT).

4.2.1 Installation of the rotary flange fitting (JQE)

The rotary flange fitting serves as a connecting piece between the pipe and the water softening system.

It is suitable both for horizontal and vertical pipes.

The rotary flange fitting must be installed in the direction of flow. This is indicated by an arrow integral with the casting (see fig. 2).

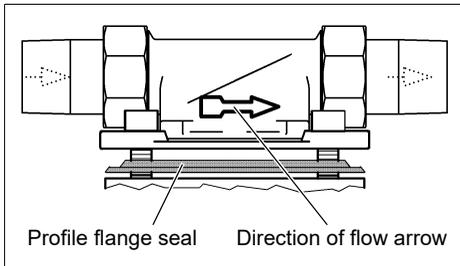


Fig. 2: Rotary flange fitting

⚠ If this requirement is ignored, the water softening system will not work.

The flange surface of the rotary flange fitting must be upright! The rotary flange fitting must be fitted so that it is free from mechanical stress or strain. Otherwise mechanical damage of the rotary flange fitting may result. This can result in severe water damage.

Therefore when installing, ensure that no large forces act on the pipe, rotary flange fitting or water softening system.

4.2.2 Installation of the parallel connection flange (JQT)

- After flushing the water pipe, remove the black mounting cover of the rotary flange fitting.
- Check whether the profile of the profile flange seal is pointing toward the rotary flange fitting (see fig. 3).

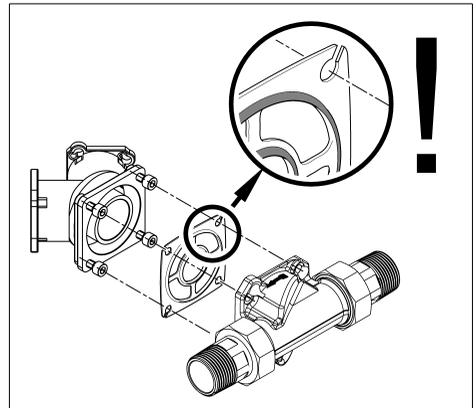


Fig. 3: Profile flange seal

- Connect the flange of the parallel connection flange to the rotary flange fitting by latching in the bayonet connection and then tighten the four hexagon socket head screws.

4.2.3 Installing the support elements

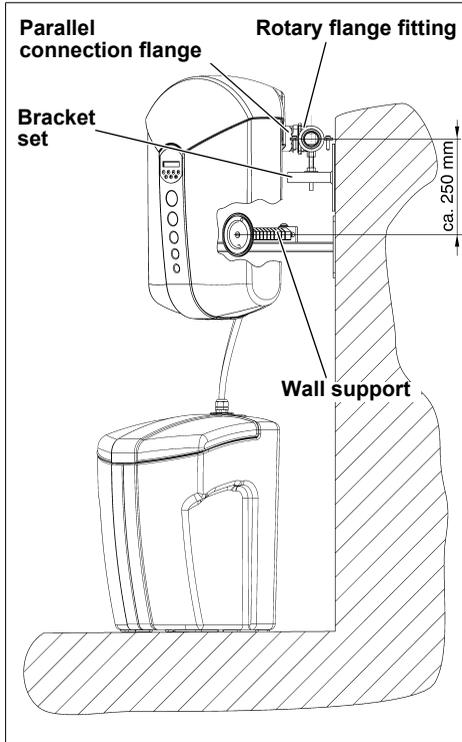


Fig. 4: Support elements

The bracket set (2 brackets with one pipe clamp each) is screwed to the wall with 4 hexagon head screws.

Notes on installing the wall support (container support) are included in the corresponding installation instructions.

4.2.4 Installing the two individual softeners

The connection flange of the water softening system is covered by a white protective cap. This protective cap is secured using four hexagon socket head screws M6×130.

- Loosen all four hexagon socket head screws M6×130, but do not screw out completely (bayonet connection)!
- Remove the white protective cap.

The profile of the profile flange seal must point towards the parallel connection flange. If this is not observed, water leaks may occur. This can result in water damage to the building, furnishings and equipment.

- Raise the water softening system and swivel approximately 30° in counter-clockwise direction.
- Place it on the parallel connection flange so that the screw heads project through the bayonet holes.
- Swivel the water softening system back approximately 30° in a clockwise direction.
- Fully tighten the four M6×130 hexagon socket head screws.

Nm Select the tightening torque (about 4 Nm) so that the seal is effective and the water softening system is not damaged or strained!

After installation of the water softening systems, push out the wall support until it touches the cladding of the devices and the devices hang vertically on the wall. Then tighten the screws of the wall support.

4.2.5 Attaching the unit label

Attach the unit label near the unit, e.g. on the parallel connection flange or on the pipe.

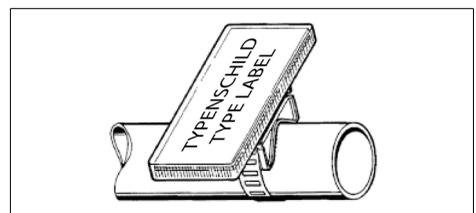


Fig. 5: Unit label

4.3 Connection of the water softening system with the salt reservoir

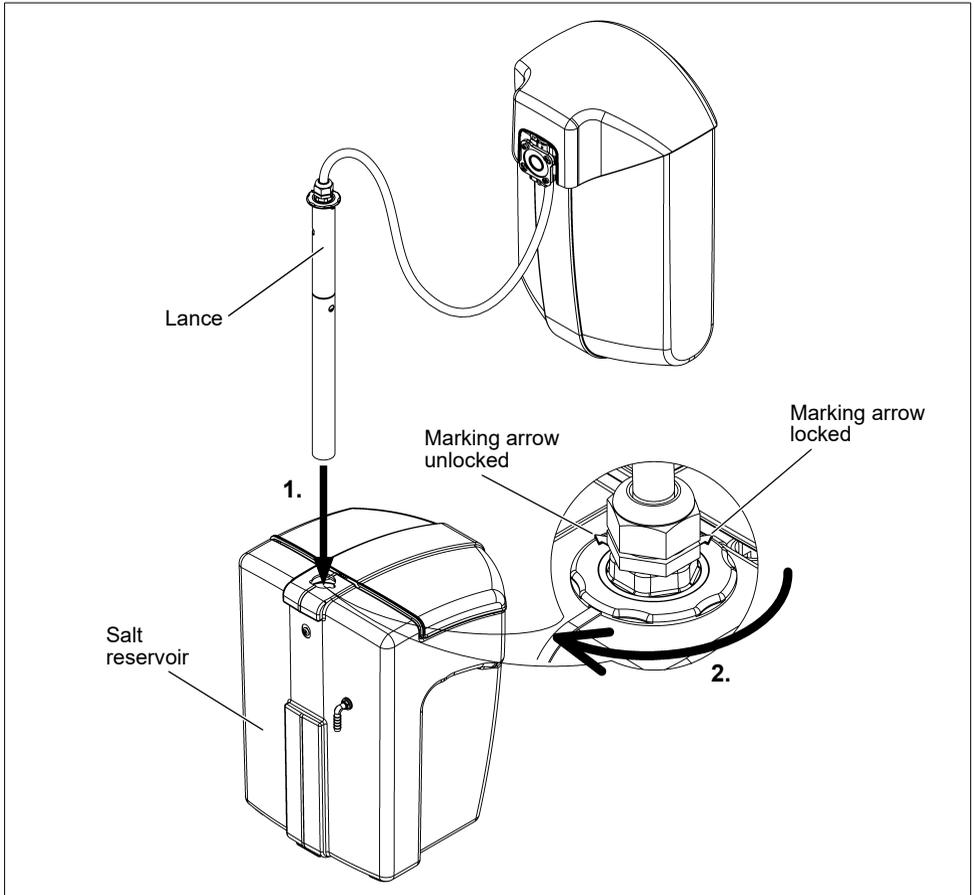


Fig. 6: Connection of the water softening system with the salt reservoir

Procedure (see fig. 6):

1. Push the lance up to the stop in the salt reservoir.



Note the marking arrow:

In doing so the arrow must point to the side (see fig. 6)!

2. To lock, turn the lance through 90° in the clockwise direction (up to the stop).



Note the marking arrow:

The arrow must now point to the front side of the salt reservoir (see fig. 6)!

The salt reservoir can be placed below the water softening system or next to it on the floor.



If the salt reservoir is placed directly next to the water softener, make sure that the jacket hose (see fig. 7) has a steady downward slope from the water softener to the salt reservoir.

4.4 Waste water connection and safety overflow hose

The hoses for the regeneration waste water and the safety overflow must both be routed without any kinks and with a steady downward slope to the water trap (in the scope of supply). The water trap ensures a free discharge in accordance with DIN EN 1717 (see fig. 7).

The waste water hose with 11 mm outside diameter must not be routed any higher than the control head. The hose length must not exceed 3 m.

The safety overflow hose with 19 mm outside diameter must be routed with a steady downward slope to the water trap.

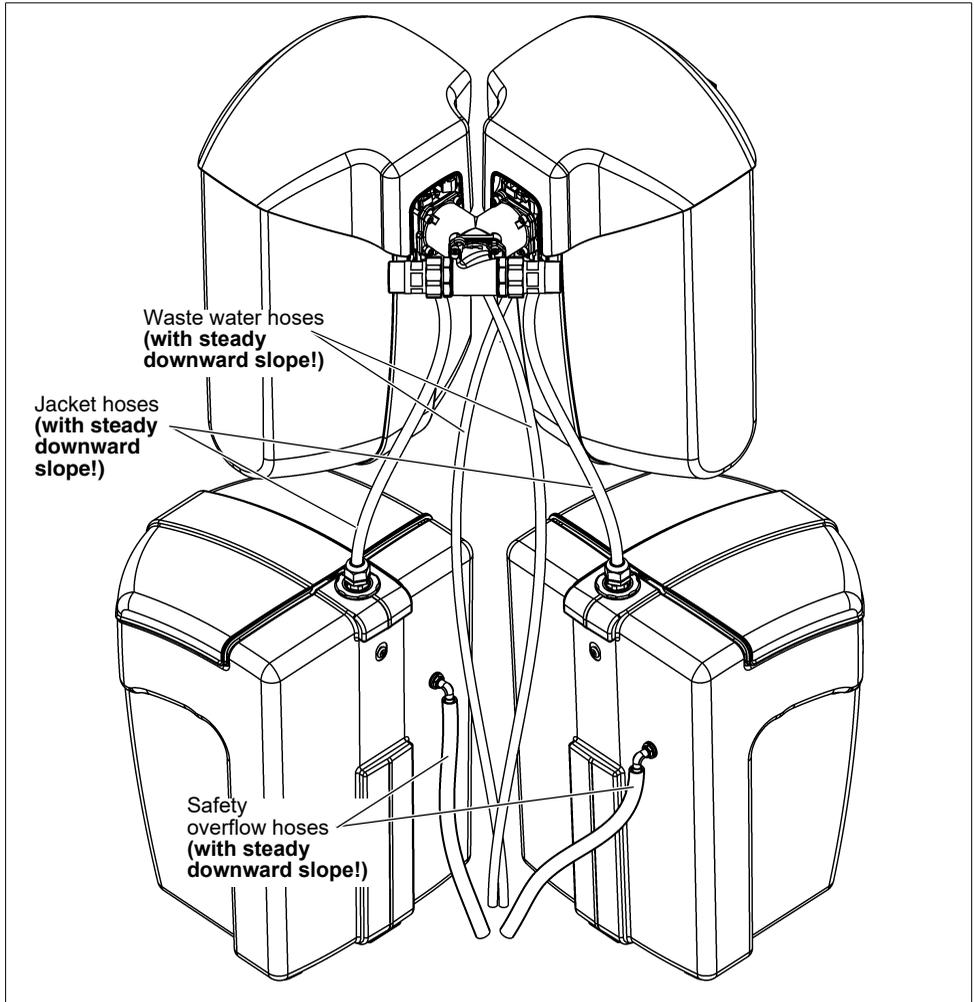


Fig. 7: Connection to the water trap

If a continuous incline to the water trap cannot be achieved at the location of installation, then a saltwater-resistant pumping sys-

tem must be installed to convey the regeneration waste water.

5 Operation

5.1 General

Operation start, setting the raw water hardness, the mixing and the filling with salt must be performed separately for each individual softener.

5.2 Control panel

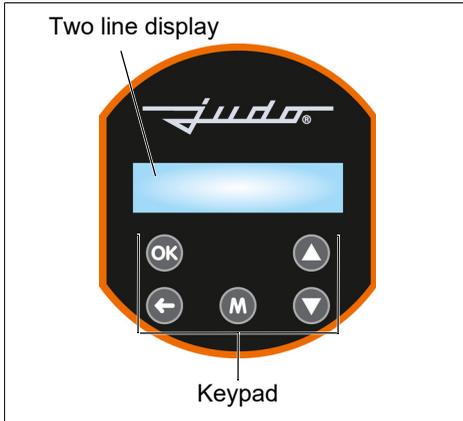


Fig. 8: Water softening system control panel

Operation of the water softening system takes place via the keypad and display (see fig. 8).

Key functions:

-  Access to the main menu (see chapter 5.3 “Menu functions”)
-  - Scroll up in the menu
- Increase value
-  - Scroll down in the menu
- Reduce value
-  One menu level back without saving
-  - Access to the sub-menu
- Accept value and save and one menu level back
- Acknowledge message

Display background lighting:

- none: normal operation
- alternating light blue/dark blue: with a water flow
- white: when pressing a key
- yellow: for warning messages
- red: for fault indications

5.3 Menu functions

Pressing the key  calls the main menu:

Main menu

- Raw hardness

The next or previous sub-menu is displayed using keys  and  and called using the **OK** key.

In the sub-menu individual values are increased or decreased using keys  and  and then accepted using the **OK** key.

Sub-menus:

Raw water hardness

- Raw water hardness setting (see chapter 5.4.3 “Raw water hardness setting”)

Regeneration

- Manual regeneration start (see chapter 5.4.2 “Manually starting regeneration of the water softening system”)

Settings

- Language:
DE, EN, FR, NL, IT
- Water hardness unit:
°dH, °e, °f, gpg, ppm, mmol/l, mval/l
- Lighting, contrast, tone
- Functioning of the fault indication relay (see chapter 5.8 “Potential-free fault indication”)

- Factory setting (see chapter 5.14 "Resetting to factory setting")

Operating data

- Total soft water volume since commissioning [m³]
- Total number of regenerations since commissioning
- Total number of maintenances since commissioning

Info

Various information is displayed here such as device type, device number, customer service telephone number, history of the warning messages and fault indications, software version, hardware version and the date for the next necessary maintenance intervention.

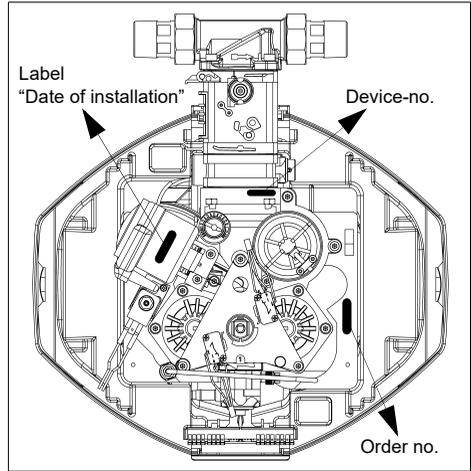


Fig. 9: Device and order no. plus Label "Date of installation"

5.4 Start of operation

- To shorten commissioning, fill approximately 5 litres of water into the salt reservoir (until just above the intermediate floor).
- Fill 25 - 50 kg of regenerating salt into the salt reservoir.

The regenerating salt must as a minimum comply with the requirements of DIN EN 973 and be of food-grade.

Our recommendation: Broxo or Solvay salt, either as blocks, tablets or coarse grains 7 - 15 mm. If other regenerating salts are used, then the salt reservoir must be cleaned at shorter intervals and the intake strainer replaced more frequently.

- Remove the cover.
- Enter the date of installation on the label (see fig. 9).
- Open the water supply (stopcock or shut-off valve).
- Ensure that the bypass valve (if installed) is set to "Operate".



NOTICE



For safety reasons, the water softening system must be **immediately flushed and re-generated for bleeding**.

See chapters 5.4.1 and 5.4.2 for this purpose!

5.4.1 Flushing the water softening system

- To do so open a tap (as close as possible to the water softening system) and create a volume flow of about 500 l/h.
- After a minute's flushing (both resin containers are vented), plug the power supply unit into the socket.

After connection to the power supply, the electronics automatically perform a self-test.

Status display:

After a successful conclusion, the following text is output to the display:



Fig. 10: Status display

5.4.2 Manually starting regeneration of the water softening system

To do so, the water softening system must be in an operating position. The status is shown on the display (see fig. 10).

Press key **M** 1x and then key **▼** 1x. The display shows the following:

Main menu
• **Regeneration**

Press the <OK> key. The display shows the following:

Regeneration
start

Pressing <OK> starts regeneration.

Then "Regeneration" is output to the display.

Regeneration is completed after about 15 minutes. The display shows the status again (see fig. 10).

The water softening system is now ready for operation.

The following parameters must then be set:

- Raw water hardness (see chapter 5.4.3 "Raw water hardness setting")
- Mixing (see chapter 5.4.4 "Adjusting the mixing")

5.4.3 Raw water hardness setting

The value depends on the installation location. It can either be requested from the water supply company or determined using a suitable measuring instrument (included in the scope of supply). If the raw water hardness fluctuates, the higher value should be set. The same quantity of brine is always used for regeneration. If the raw water hardness is high, a reduced water volume is treated. If the raw water hardness is low, a greater water volume is treated.

The water softening system is pre-set to a

raw water hardness of 25 °e. Another raw water hardness is set as follows:

Press key **M**. The display shows the following:

Main menu
• **Raw hardness**

Press the <OK> key. The display shows the following:

Setting
Raw hardness

Press the <OK> key. The display shows the following:

Raw hardness
25 °e

Use the **▼** key to reduce the raw water hardness and the **▲** key to increase it. The step size is 1 °e.

The chosen raw water hardness value is saved by pressing <OK>.

5.4.4 Adjusting the mixing

In the factory the set screw of the mixing valve is set to slightly open (see fig. 11). First a check must be performed to determine what mixing water hardness exists with this setting. The water hardness measurement is performed with a measuring instrument (in the scope of supply).

The sample water for measuring and setting the water hardness can be drawn at the bypass valve or from a water tap connection downstream of the water softening system.

It must be ensured that the mixing water quantity set has flown from the water softening system to the drawing point. For a correct measuring value comparison, the samples should be taken with a normal water flow (1 tap fully open). During drawing, no

large volume of water should be drawn at another point.

If the desired mixing water hardness is not achieved, then it can be corrected by turning the set screw of the mixing valve **within the marked adjustment range** by no more than a half turn. A value of about 10 °e is recommended.

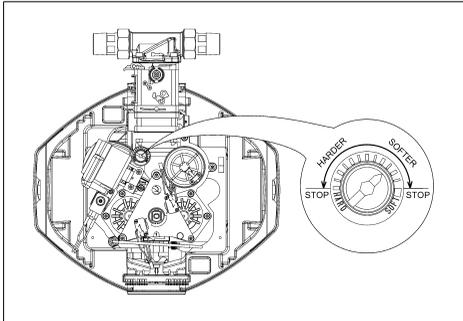


Fig. 11: Adjusting the mixing

If necessary, the setting must be changed and re-measured a number of times until the desired value is achieved.

After the softening, the sodium concentration in the mixing water increases, dependent on the raw water hardness and the set mixing water hardness.

According to current drinking water legislation, the limit value for sodium in drinking water is 200 mg/l. Mineral and table water are not affected by this. Their limit values are much higher, partially greater than 1000 mg sodium per litre.

Calculation of the sodium content

°e	Raw water hardness (ask the water supply company or measure with hardness measuring instrument)
- °e	Residual hardness (measured value)
= °e	Difference in water hardness
×	6.4 mg Na ⁺ /l × °e Na ions exchange value
=	mg/l Increase of the sodium content by softening
+	mg/l sodium already present in the raw water (ask the water supply company)
=	mg/l Total sodium content in the mixing water

Example calculation of the sodium content

25 °e	Raw water hardness
- 10 °e	Residual hardness
= 15 °e	Difference in water hardness
× 6.4	
= 96 mg/l	Due to softening:
+ 10 mg/l	From the water supply com-
= 106 mg/l	In total

If the calculated total sodium content exceeds the valve permitted by the drinking water legislation of 200 mg/l, then it can be corrected by increasing the mixing water hardness.

The calculation of the sodium content must then be repeated.

5.5 Menu structure

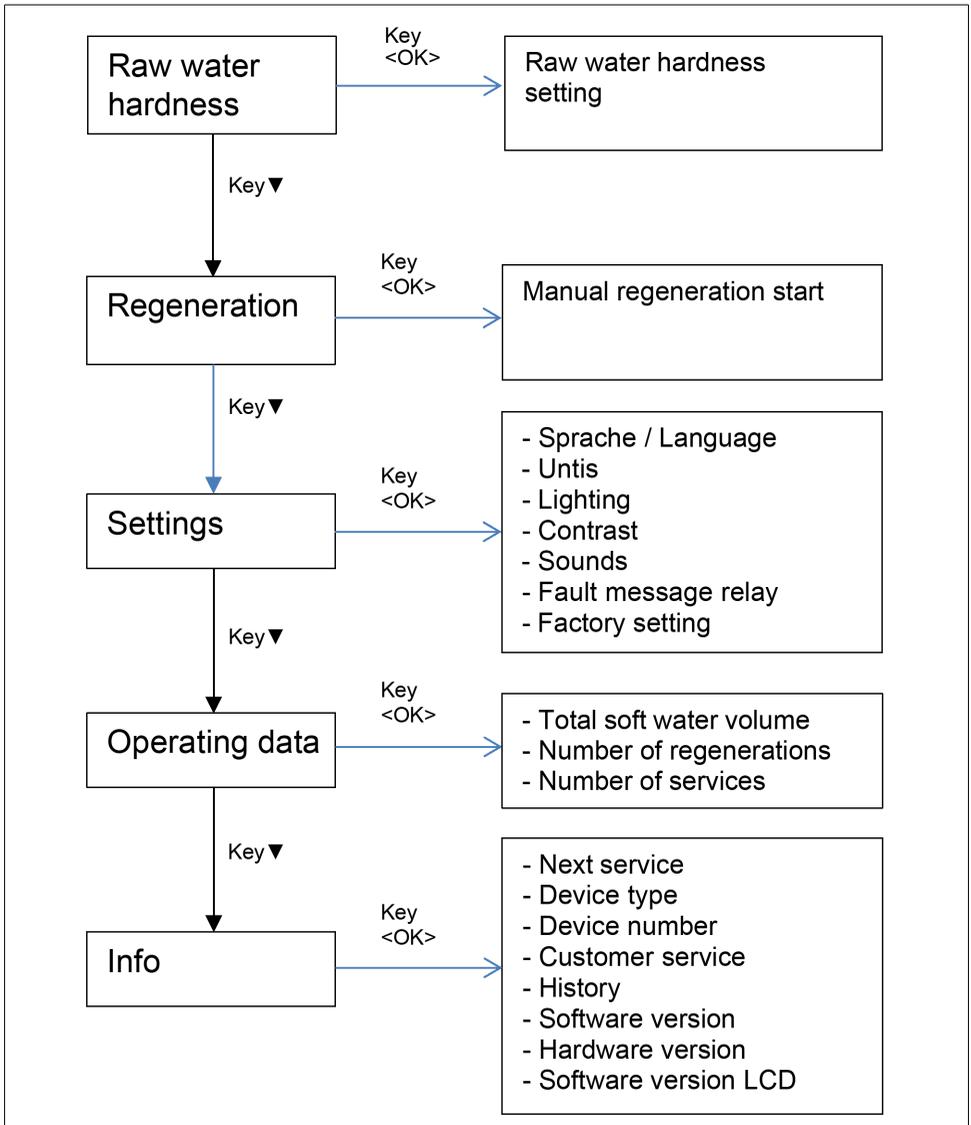


Fig. 12: Menu structure

5.6 Function description

5.6.1 Method of operation

The filter containers are filled with ion-exchange resin. This comprises small plastic resin balls on which the calcium ions, which make the water "hard", are exchanged for sodium ions. This makes the water "soft". In the control head an adjustable quantity of not-softened raw water is admixed to obtain the mixing water hardness downstream of the system. However the ion-exchange resin only absorbs a limited quantity of these hardness components. Dependent on the water hardness and the treated water volume, sooner or later it is exhausted. The time at which it becomes exhausted is measured with the water meter and regeneration automatically triggered. To do so, diluted brine (sodium chloride) is used to remove the hardness components from the resin.

5.6.2 System design

The water softening system is designed as a parallel system that is regenerated in two stages. During regeneration, the two resin containers are alternately responsible for soft water provision. In this way soft water is always available for the consumer, even during regeneration.

5.6.3 Regeneration

With a very short regeneration period of about 7.5 minutes per resin container (total: 15 minutes) high volume continuous drawing is possible.

The soft water volume is precisely measured using a water meter in the system's soft water pipe and in this way triggering of regeneration is controlled. Regeneration is performed according to DIN EN 14743 and DIN 19636-100 using miser salting. Disinfection of the system takes place at regular intervals to prevent microbe contamination. The small quantity of chlorine required for this is created electrolytically during regeneration from the absorbed brine.

5.6.4 Control of regeneration

Regeneration is performed automatically via wear-free ceramic disc valves. The regeneration sequence is fixed by the geometry of the discs and therefore need not be re-entered after a power failure.

5.6.5 Overflow valve

If the drawing of water (e.g. by a flushing valve) is very strong, an overflow valve integrated in the control head opens so that hard water can bypass the system to limit the pressure loss. This means that the mixing water hardness temporarily increases in the pipe downstream of the water softening system.

5.7 Filling with salt

The water softening system works automatically. Approximately 180 g of salt is needed for each regeneration. The regenerating salt must be replenished at regular intervals.

Our recommendation: Broxo or Solvay salt, either as blocks, tablets or coarse grains 7 - 15 mm. If other regenerating salts are used, then the salt reservoir must be cleaned at shorter intervals and the intake strainer replaced more frequently.

The salt reserve should not decrease so far that the liquid level is above the regenerating salt, as otherwise when replenishing the salt, it rises excessively.

The regenerating salt is normally replenished in sacks of 25 kg. This salt quantity is sufficient for at least 120 regenerations.

5.7.1 Message upon low salt level

The salt concentration of the brine reservoir is automatically regularly checked. If the salt container is not topped up in time and the brine concentration is too low, the display indicates:

Attention! Salt deficit

After this message, replenishment with a quantity of 25 kg of regenerating salt is required. Then the <OK> key must be briefly pressed. The warning message is then reset.

 This message can also appear if the salting process is not performed correctly during regeneration, e.g. if the waste water hose is routed at a too-high level, if the mains water pressure is too low or if the suction hose connection to the salt/brine tank is not made correctly.

If the salt is only replenished once the salt reserve is completely used up, the brine level may temporarily increase. The suction process then lasts correspondingly longer.

If there is no longer any regenerating salt available or if the regenerating salt is not replenished early enough, the water softening system switches to miser operation.

The remaining brine reserve is primarily used for disinfection of the ion-exchange resin, and the softening effect is reduced.

In this way, the water softening system remains in a hygienic condition for weeks after the low regenerating salt state first occurs.

5.8 Potential-free fault indication

In the following cases a message is displayed by a potential-free signal relay:

- In the event of a water softening system fault indication
- If there is a power loss
- If a low salt condition exists



Prior to electrical installation, pull the power supply unit out of the socket!

The chapter 2.2 “Indication of particular dangers” must be observed without fail!

Adhere to the maximum switching current and maximum voltage (see chapter 2.2.1 “Electrical devices/installations”)!

The contacts of the potential-free relay are shown in the zero-current state in fig. 14.

Setting the switching function:

Press the **M** key 1x and then ▼ 2x. The display shows the following:

Main menu
• **Settings**

Press key <OK> 1x and then key ▼ as often as necessary, until the display indicates the following:

Setting
• **Fault relay**

Press the <OK> key. The display shows the following:

Fault relay
Normally closed

Press key ▲ or ▼ to change between <Normally closed> and <Normally open>.

The chosen setting is saved by pressing <OK>.



The fault signalling cable is not part of the scope of supply (see chapter 9.5 “Accessories”).

5.9 Integration of the water softening system in building control systems

The water softening system can be integrated via the potential-free relay into a building control system (e.g. EIB, LCN or LON).

For example, the potential-free relay is connected to a binary bus coupler. This allows a fault indication to be forwarded to the building control system.

5.10 Connectivity module (accessory)

A retrofittable connectivity module is used to connect the water softening system via a LAN connection to the home network and the Internet (see chapter 9.5 “Accessories”).

One connectivity module is required for each individual softener. Each device is detected individually; i.e. the softener appears twice in the app.

Using the “JU Control” iOS/Android app, worldwide access to comprehensive information, automated messages and functions of the water softening system is possible.

5.11 Conversions / changes / spare parts

Only original spare parts may be used!

Unauthorised conversions and changes are forbidden for safety reasons! Such actions could impair the functioning of the water softening system. The imprinted approval marks are only valid if original spare parts are used.

5.12 Maintenance/repair



NOTICE



Before performing work on the water softening system that goes beyond pure operational use, the water softening system must be depressurised!

If this is ignored, the result may be uncontrolled egress of water resulting in water damage to the building/home. Therefore the instructions given in chapter 4 "Installation" and chapter 7 "Servicing" must be strictly observed.

5.13 Interruption of operation

The water supply to the water softening system is interrupted. The main stopcock is closed or the bypass valve is switched over.



Pull the power supply unit out of the socket! (If present, also pull out the power supply unit of the downstream dosing pump!)

- When disassembled, the water softening system must be stored in a dry and frost-free location.
- The connection flange must be protected against dirt and damage.
- Once the water softening system is fitted and started again, it must be flushed and regenerated (see chapter 5.4 "Start of operation").

5.14 Resetting to factory setting

All customer settings can be reset to the factory setting in the following way:

Press the **M** key 1x and then **▼** 2x. The display shows the following:

Main menu

- **Settings**

Press key <OK> 1x and then key **▼** as often as necessary, until the display indicates the following:

Setting

- **Factory setting**

Press the <OK> key. The display shows the following:

Factory setting

<no>

Press key **▲** or **▼** to change between <yes> and <no>.

The following default values are recreated by pressing key <OK> with <yes> selected.

- Raw water hardness 25 °e
- Fault indication relay: NOC function
- Lighting 80 %, contrast 50 %

5.15 Overview of the display messages

Display	Description	Further info
Regeneration	Message is displayed during regeneration of the resin container.	see chapter 5.6.3 "Regeneration"
Maintenance/Service req.	Message appears after the one-year maintenance interval has elapsed.	see chapter 8.3.1 "Message "Maintenance/Service""
Attention! Salt deficit	Message appears after exceeding of the minimum chlorine flow.	see chapter 5.7.1 "Message upon low salt level"

6 Fault

Opening of devices and replacement of parts subject to water pressure must only be performed by licensed persons to ensure device safety and leak-tightness.

Indication on the display	Cause	Remedy
Attention! Error Reg. Drive	Regeneration drive defective.	Notify customer service! Unplug the power supply unit! If fitted, switch the bypass valve to bypass!
Attention! Error Salification	Salting process defective, container overfilled or leak.	Check the brine level in the salt reservoir! Reset fault indication! If the fault occurs again, notify customer service!
Attention! Error Lso-electrode	Level electrode defective.	Reset fault indication! If the fault occurs again, notify customer service!
Attention! Error Keypad	Keypad defective.	Reset fault indication! If the fault occurs again, notify customer service!

Deleting the fault indication:

- Press <OK> key.

or

- Disconnect the power supply unit from the socket and plug back in after about 5 seconds.



When communicating with customer service, please always have the device number and order number available (see fig. 9).

7 Servicing

7.1 Cleaning

Only use clear drinking water to clean the housing.

Standard all purpose cleaners and glass cleaners can contain up to 25 % solvent or alcohol (methylated spirits).

These substances can chemically attack the plastic parts resulting in embrittlement and even breakage.

Therefore do not use these types of cleaner!

8 Warranty and maintenance

To ensure the process operates successfully for many years after first use, regular inspection and routine servicing of the system are essential. Where home automation is concerned, this is governed by DIN EN 806-5.

We recommend that you agree a maintenance contract.

A maintenance contract is the best way of ensuring correct operation even after the warranty period has elapsed.

It is desirable that the regular maintenance work and the supply of consumables, mineral solutions, salt or wear parts, etc. is performed by the JUDO factory customer service team or by an approved technical service provider.

8.1 Inspection by the operator every two months (visual inspection)

To retain your legal warranty rights, it is necessary that an inspection be performed at least every two months.

The operator checks:

- The salt filling level.
- The leak-tightness of the softening system (escaping water).
- For damage to the water softener. Defective parts must be replaced by customer service.
- Messages on the display.

Dependent on the consumed water volume, the corresponding salt consumption must be regularly monitored. If necessary, replenish the regenerating salt (only use quality according to DIN EN 973). When replenishing the salt take appropriate hygiene measures. Thus, for example, the salt packs should be cleaned before use so that no impurities can get into the salt dissolving container. The regenerating salt must be shaken into the salt dissolving container directly after undoing

the packaging. In doing so, ensure that the salt dissolving container is not overfilled and that after completing the work, it is again carefully closed and sealed. Do not use partial packs. The salt must only be stored in clean and dry rooms.

8.2 Six-monthly maintenance by the operator

In addition to the checks of the 2-month inspection, the operator must also check the following every six months:

- Leak-tightness of the softener to waste water connection.
No water must flow out of the waste water hose (see fig. 7) in the operating position.
- Salt deposits inside the water trap.
Deposits or incrustations inside the water trap must be removed so that the waste water does not get blocked.
- Soft water hardness.
Checking is performed with a hardness measuring instrument (in the scope of supply).

8.3 Annual maintenance by customer service

Servicing must be performed once per year by a licensed technical service provider or the JUDO factory customer service team.

8.3.1 Message “Maintenance/Service”

After an operating period of one year, the water softening system signals the required maintenance. The following message is shown on the display:

**Maintenance/
Service req.**

After the maintenance intervention, the message is reset by pressing the <OK> key for at least 5 s.

9 Data sheet

9.1 Type

JUDO QUICKSOFT MEGA 4

Water softening system

Order no.: 8200367

9.2 Technical data

- Maximum ambient temperature and water temperature 30 °C
- **The water to be softened must comply with the European Drinking Water Directive!**

Operating pressure	Rated pressure
2 - 7 bar	PN 10

The rated pressure indicates the pressure stage at which the water softening system must meet the requirements of DIN EN 14743 and DIN 19636-100. The maximum operating pressure is lower to ensure the optimum function of the water softening system.

Pipe connection	1¼"
Number of single softeners	2
Recommended number of dwelling units	3 - 6
Operating weight with full salt charge	approx. 180 kg
Shipping weight with pallet	approx. 80 kg
Rated flow as per DIN EN 14743 at 1 bar pressure loss	3.0 m³/h
Rated flow with a hardness reduction from 25 °e to 10 °e	4.5 m³/h
Rated capacity	1.8 mol
Total content of the two salt reservoirs	100 kg
Total volume of the exchanger resin	10 l
Water consumption per regeneration	50 l
Salt consumption per m³ with a hardness reduction from 25 °e to 10 °e	400 g
Electrical connection	230 V/ 50 Hz
Power consumption: Operation Regeneration	2 W max. 30 W
Max. raw water hardness	125 °e

9.3 Installation dimensions

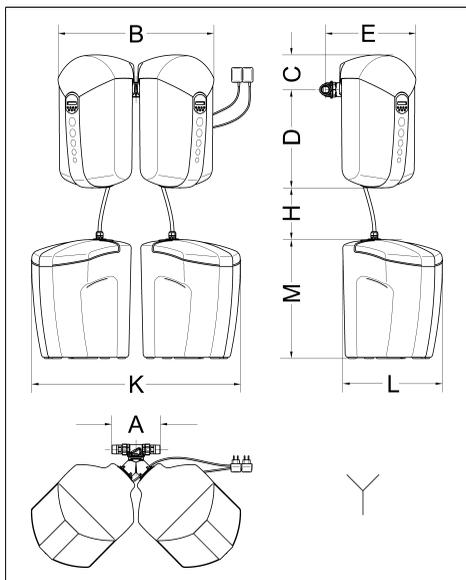


Fig. 13: Installation dimensions

A	230	Installation length
B	735	Device width
C	165	Height above the pipe middle
D	465	Height below the pipe middle
E	430	Installation depth up to the pipe middle
H	240	Maximum distance between water softening system and salt reservoir
K	990	Total width of the salt reservoirs
L	475	Depth of the salt reservoirs
M	560	Height of the salt reservoirs
		 Sewer connection necessary

All dimensions in [mm] (see fig. 13)

9.4 Scope of supply

- 2 water softening systems
- 2 salt reservoirs
- Rotary flange fitting
JQE 1¼" with screw connection
- JQT parallel connection flange

- 2 safety overflow hoses and 2 waste water hoses
- Water trap with attachment
- Bracket set
- Wall support
- Installation and operating instructions
- Hardness measuring instrument

9.5 Accessories

- Fault signalling cable
(order no. 2200717)
- Set with 2 connectivity modules
(order no. 8235011)

9.5.1 Protective measures to prevent corrosion

For water with water hardness 0 °e, plastic pipes or corrosion-resistant pipes should be laid.

For water with partial softening (about 10 °e), galvanised pipes and copper pipes can be laid.

Our recommendation:

Installation of a JUDO JULIA dosing pump in the mixing water pipe downstream of the water softening system, so that the water can be admixed proportionally with a JUL mineral solution.

The JUL mineral solutions contain substance components that stabilise the remaining carbonate hardening components and create the conditions for formation of a homogeneous protective layer in the downstream pipe system. These substance components correspond in the prescribed type, quality and quantity to section 11 of the current German Drinking Water Act ("Treatment substances and disinfection processes").

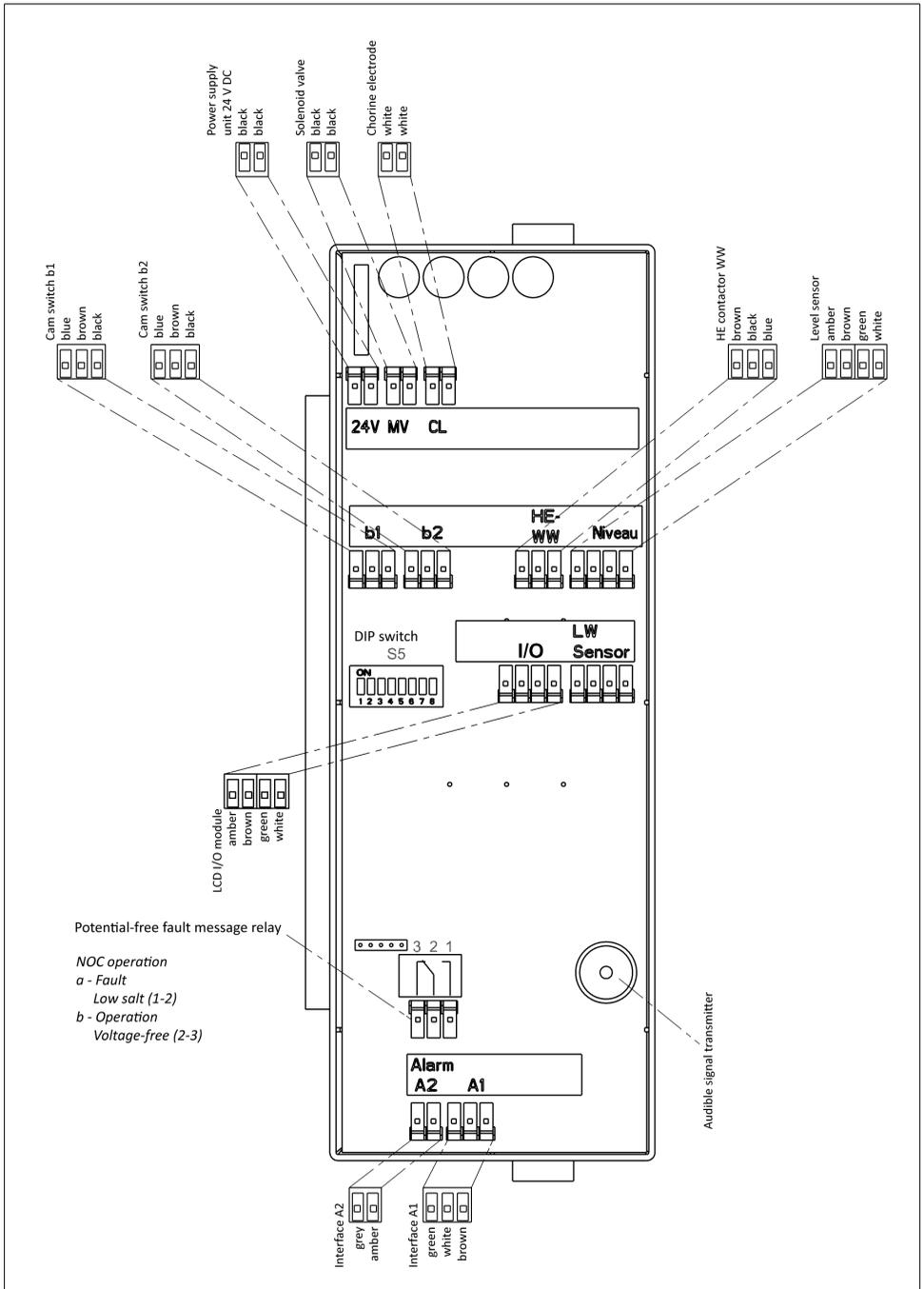


Fig. 14: Electronic control unit with fault message relay

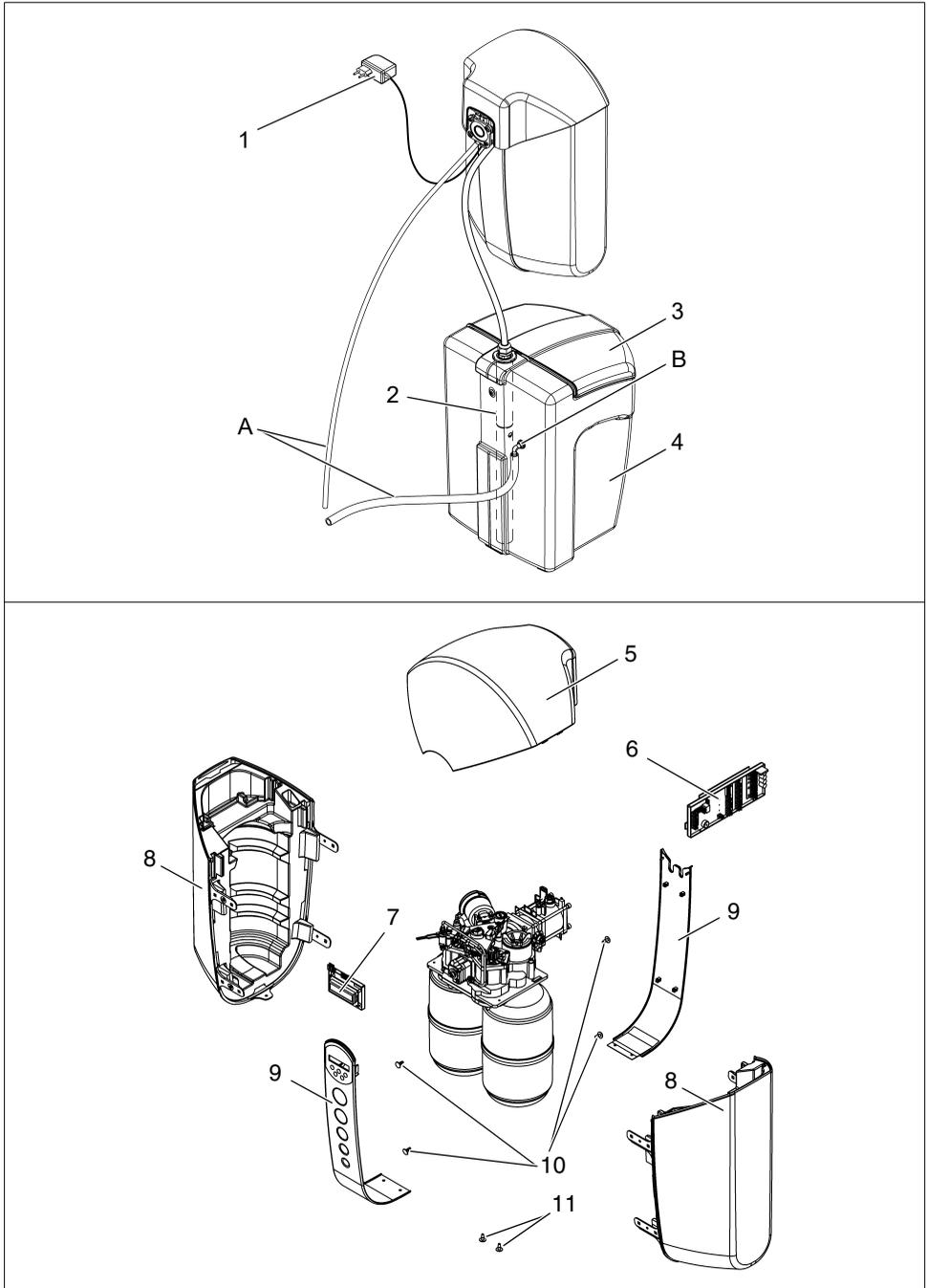
10 Spare parts

Fig. 15: Spare parts JUDO QUICKSOFT MEGA 4

Spare parts list JUDO QUICKSOFT MEGA 4

Item	Designation (recommended average Replacement interval for wear part [*])	Order no.	AU ¹⁾	
--	Wear part set intake strainer	**	2201270	14
--	Wear part set pressure regulator	****	2200582	88
--	Spare part set injector		2201470	78
A	Spare part set hoses, complete		2200012	25
B	Spare part set overflow connection		2202230	38
1	Power supply unit EU 24 V DC		2210506	65
2	Lance		2201855	135
3	Cover of salt reservoir		2201480	35
4	Salt reservoir		2201841	193
5	Cover		2202243	AU ²⁾
6	Electronic control unit		2201903	236
7	I/O module 2×16 RGB LCD		2201847	149
8	Cover panel (including 4 snap rivets item 10)		2201859	197
9	Middle faceplate (including 2 screw rivets item 11 and membrane keyboard)		2201861	174
10	Snap rivet (set with 6 pieces)		2210546	7
11	Screw rivet (set with 2 pieces)		2202045	9

1) AU = Accounting unit

2) Accounting unit not specified at the time of going to press.

Replacement interval: ** = 2 year, **** = 4 years

11 Disposal

Packaging waste is to be sent to the local recycling system.

To protect environment, old appliances must not be disposed of with household waste. Instead, use the local collection and return points, which are committed to free and environmentally sound disposal.



12 Customer service



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Installed by:

JUDO ECO-SAFE The leakage protection to be combined with the backwash protective filters of the filter range EC.	JUDO JULIA Metering pump for JUL mineral solution against corrosion (brown water) and lime deposits.	JUDO HEIFI-TOP Backwash protective filter to be used in the heating-circuit in a one-family or multi-family dwelling. Removes sludge and enclosed gases.
JUDO SPEEDYMAT-LongLife Automatic backwash protective filter in the long-life class with patented ceramic flushing valve backwashing technique.		JUDO JUKOMAT-LongLife Automatic domestic water station in the long-life class with patented ceramic flushing valve backwashing technique.

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