

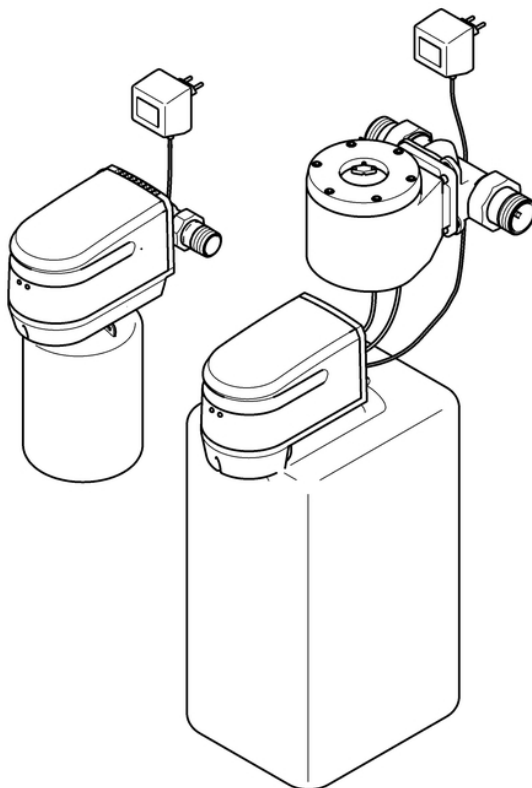
Installation and operating instructions

JUDO JULDOS 4 - 25

Dosing pump

Valid for: EU countries and Switzerland

Language: English



Read before use and store!



Queries, orders, customer service

JUDO Wasseraufbereitung GmbH
Postfach 380
D-71351 Winnenden

Email: info@judo.eu • judo.eu

Office address:

JUDO Wasseraufbereitung GmbH
Hohreuschstraße 39 - 41
D-71364 Winnenden

Dear customers,

Thank you for the confidence you have shown in us by purchasing this product. You have purchased a state-of-the-art device. It has been carefully checked prior to delivery. Nevertheless, if difficulties occur, please contact the closest customer service (see chapter Customer service).

Trademarks:

Trademarks used in this document are the protected and registered trademarks of the owners.

© JUDO Wasseraufbereitung GmbH
D-71364 Winnenden

All rights reserved.

Reprinting, even in excerpt form, is only permitted with special approval.

These installation and operating instructions are intended for both installers, who are in charge of installing, maintaining or repairing the device, and for the operators of the device.

Contents

1 Safety..... 4

1.1 Intended use..... 4

1.2 Application limits..... 4

1.3 Safety instructions..... 4

1.4 Symbols used..... 6

1.5 Units used..... 6

1.6 Documentation and information obligations of the operator..... 7

2 Product information..... 7

2.1 Scope of supply..... 7

2.2 Function description..... 7

2.3 Remote monitoring..... 9

2.4 Materials used..... 9

2.5 Approval marks..... 9

3 Installation by a technical service provider..... 10

3.1 Requirements for the place of installation..... 10

3.2 Installation position..... 10

3.3 Power supply..... 11

3.4 Installing the rotary flange fitting. 11

3.5 Mounting the device..... 12

4 Commissioning..... 16

4.1 For JJD 4: Screw on the mineral solution container..... 17

4.2 Bleeding and flushing the water meter..... 17

5 Operation..... 17

5.1 Setting the dosing quantity..... 17

5.2 Selection of the appropriate JUL mineral solution / tablets..... 18

5.3 Refilling the mineral solution container..... 18

5.4 Protection against third-party access..... 19

5.5 Conversions, changes..... 19

5.6 Temporary removal of the device (technical service provider)..... 20

5.7 Maintenance, repair, spare parts 20

6 Remote transmission of messages..... 20

6.1 Forwarding status and fault messages over floating outputs..... 20

6.2 Integration in building control systems..... 21

7 Servicing..... 21

7.1 Maintenance..... 21

7.2 Maintenance adhesive label..... 22

7.3 Function check..... 22

7.4 Repair by JUDO customer service or a technical service provider, spare parts..... 22

8 Fault..... 23

9 Technical data..... 24

9.1 Wall mounting installation dimensions..... 25

9.2 Installation dimensions..... 26

9.3 Electronic control unit..... 28

9.4 Accessories..... 28

10 Disposal..... 29

11 Spare parts..... 30

12 EC Conformity Declaration..... 39

13 Customer service..... 40

1 Safety

These operating instructions must always be available at the place of use of the device.

1.1 Intended use

The device is for quantity-proportional automatic dosing of JUDO JUL mineral solutions into drinking water that protects cold and hot drinking water supply systems against

- Corrosion damage
- Limescale deposits.

Dosing is performed in compliance with the drinking water directive (98/83/EC).

The device can be installed in all commercially available drinking water pipes. Installation and use are subject to the applicable national conditions.

1.2 Application limits

1.2.1 Water quality

The water into which the JUL mineral solution is dosed must comply with the European Drinking Water Directive (98/83/EC). Before using the device with water that does not comply with this Directive, it is essential to consult the manufacturer.

1.2.2 Water pressure



CAUTION

The water pressure must not exceed 10 bar input pressure. A water pressure greater than 10 bar can result in device malfunctions.

Above water pressures of

- 10 bar, a pressure reducer must be installed upstream of the filter .
- 5 bar installation of a pressure reducer upstream of the device is recommended.

The water pressure must not fall below 1.5 bar during operation as otherwise device function may be impaired!

Rated pressure	PN 10
Operating pressure	1.5 - 8 bar

1.2.3 Water and ambient temperature

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

1.3 Safety instructions



WARNING

RISK OF INJURY DUE TO MOVING OR HOT PARTS!

If the device is connected to the mains, the cover must not be removed!

In the event of repair, it may be necessary for experts to remove the cover to check the functioning of the device. In this case, the following must be observed:

- **Electronic parts may become hot during operation. Risk of burns! Do not touch parts!**
- **Parts of the device may move. Risk of injuries! Proceed with extreme care and caution!**

1.3.1 Electrical danger



Risk of electric shock

No electrical wiring or equipment that is not splash-proof may run or be stored below the device. Electrical devices/ equipment located in the vicinity of the

device must be splash-proof or comply with the legal regulations for wet rooms.

Only the supplied power supply unit may be used to connect the unit to the power supply. This reduces the mains voltage for operating the electronics to a harmless low voltage of 24 V.

A splash-proof socket is required for connection to the electrical grid, in accordance with the legal regulations for wet rooms.

Only low voltages can be used for the remote transmission of the status or fault indication via the floating output.

Switching voltage: maximum 24 V
Amperage: maximum 1 A

The power supply unit must be disconnected for performance of the electrical installation.

1.3.2 Warning of property damage



WARNING

Risk of water damage or damage to property

The device may only be installed by technical service providers.

Installation of the device upstream of the water meter is forbidden.

The installation room must be dry and free from frost.

The ambient temperature must not exceed 30 °C. In higher temperatures or direct sunlight, material damage may occur up to and including breakage of device parts.

If no bypass valve (JQX; see chapter 9.4) is installed, shut-off valves must be installed to interrupt the water supply and prevent the water from flowing back to the unit during installation, maintenance, repair or malfunctions of the device.

For JJD 4: The pipe must be able to safely support the device (weight: see chapter 9). If necessary, the pipes must be provided with additional fastenings or support.

For JJD 4: Always install the device in an upright position ($\pm 5^\circ$). Otherwise, correct function of the device is not guaranteed.

For JJD 10 - 25: Position the device vertically on solid, stable and load-bearing ground, to ensure it is securely located.

For the installation of the device in domestic water piping systems, only use the supplied built-in rotary flange (see chapter 3.4).

The flange surface of the rotary flange fitting must be vertical (i.e. point forwards).

The rotary flange fitting must be fitted so that it is free from mechanical stress or strain. Otherwise mechanical damage to the pipe or the rotary flange fitting up to and including breaks can result.

For proper sealing the profiled side of the profile flange seal must point towards the rotary flange fitting (see chapter 3.4). If this is not observed, the sealing may not be perfect resulting in water escaping.

Only operate the device in a technically faultless condition:

- Check for damage prior to installation.
- Immediately have any malfunctions in operation rectified by qualified technical personnel.

Persons who, due to their physical, sensory or mental abilities or their inexperience or lack of knowledge, are unable to operate the device safely may not operate it without supervision or instruction from a responsible person.

The mains voltage must not be interrupted (e.g. via a light switch). If the device is not permanently supplied with power, dosing of mineral solution or provision of a warning in case of faults will not be possible.

For reasons of hygiene, JUL mineral solutions may only be transported and stored in sealed mineral solution containers.

The storage temperature of JUL mineral solution must be greater than 5 °C and less than 25 °C.

Do not use household cleaning agents to clean the outside of the device, rather only use a damp cloth to avoid embrittlement of the plastic.

Never use a spray cleaner or scouring cleaning agent. Ensure no moisture can get into device openings when cleaning.

The device may only be repaired by technical service providers or JUDO customer service.

Only use original spare parts for repairs.

Before performing work on the device that goes beyond pure operational use, the device must be depressurised. If this is ignored, the result may be uncontrolled egress of water resulting in water damage.

In the event of temporary removal of the device





- protect the flange surfaces against damage to ensure proper sealing.
- protect the device from dirt so as not to impair drinking water hygiene.
- store the device in a frost-free place to prevent damage caused by freezing water and possible resultant loss of leak-tightness.

Unauthorised conversions and changes are forbidden for safety reasons. These can impair the functioning of the device,

leading to leaks and, in the worse case scenario, to bursting of the device.

1.4 Symbols used

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

	Indication of existing dangers
	Warning of electric voltage
	Torques specified by the manufacturer
	User tips and other information

Instructions attached directly to the device, e.g.:

- Direction of flow (arrow)
- Type label
- Cleaning information

must be observed and maintained in legible condition.

1.5 Units used

Size	Unit	Conversion
Rated diameter	1"	Corresponds to DN 25
	1¼"	Corresponds to DN 32
	1½"	Corresponds to DN 40
	2"	Corresponds to DN 50
Pressure	bar	1 bar = 100000 Pa = 0.1 N/mm ² ≈ 14.5 psi
Water hardness	°dH	1 °dH = 0.1783 mmol/l Alkaline earth ions = 17.8 ppm CaCO ₃

1.6 Documentation and information obligations of the operator

You can download the documents for documenting the treatment substances and for providing the consumers with information from the following internet address:

judo.eu/service/download-bereich

1.6.1 Documentation obligation

According to the latest drinking water ordinance, treatment substances added to drinking water and their concentration must be documented weekly. The documentation must be kept available for six months.

1.6.2 Obligation to provide consumers with information

The drinking water ordinance also requires that any affected water consumers be informed about the treatment substances used.

Information sheets are available for this purpose.

2 Product information

2.1 Scope of supply

- Dosing pump with water meter
- Rotary flange fitting with bayonet connection and threaded fitting
- Wall mounting (only JJD 4)
- Installation and operating instructions

2.2 Function description

Dosing pump

During drawing of water, water of the drinking water system flows through the water meter. The output signal of the incorporated flow sensor controls the pump drive speed.

The precisely operating plunger pump transports the dissolved minerals out of the mineral solution container via a dosing hose to the injection point in the water meter. Here the dosing solution is injected against the water pressure into the water pipe so that the minerals mix thoroughly with the water flowing through.

The dosing quantity of the mineral solution can be regulated via the control to three different levels: *minimum*, *normal* or *maximum*.

The pump head via which the mineral solution is raised, is located at the bottom end of the pump console, just above the bottom of the mineral solution container. It does not require bleeding.

After an empty message, the dosing pump switches off automatically to prevent dry-running. It can only restart its operation, once a filled mineral solution container is attached (see chapter 5.3).

JJD 4 / JJD 10 - 25

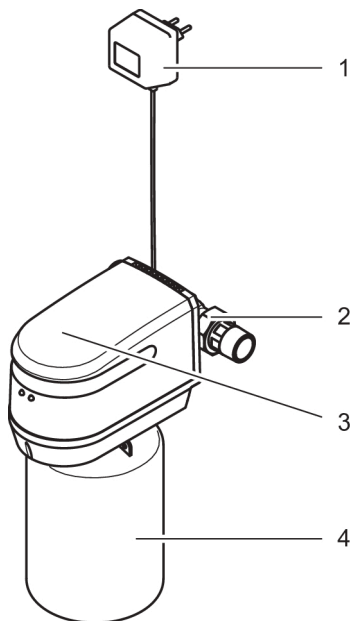


Fig. 1: Function description JJD 4

- 1 Power supply unit
- 2 Rotary flange fitting
- 3 Control unit cover
- 4 Dosing container

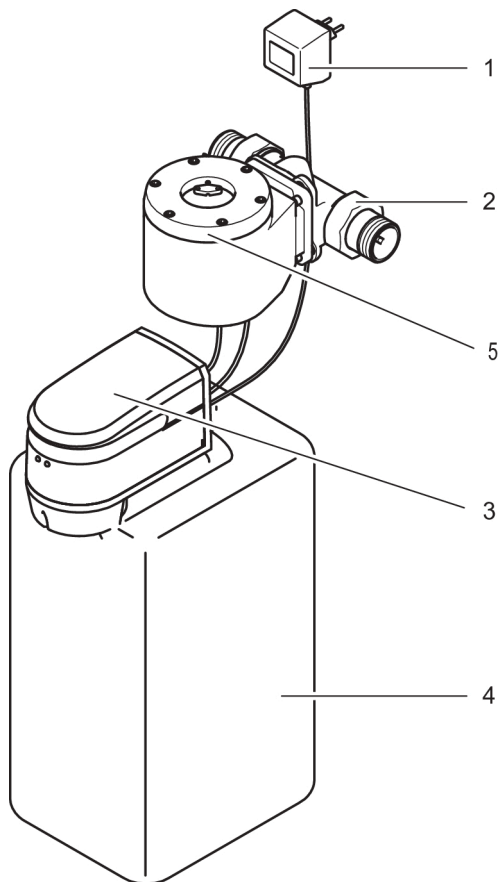


Fig. 2: Function description JJD 10 - 25

- 1 Power supply unit
- 2 Rotary flange fitting
- 3 Control unit cover
- 4 Dosing container
- 5 Water meter

The water meter for model JJD 10 differs from the illustration.

2.2.1 JUL mineral solution

The following JUL mineral solutions are available:

- JUL-W (Tabs; not for Switzerland)
- JUL-H (Tabs)

JUL-W

Application:

Galvanized pipes

Method of operation:

Orthophosphates and silicates react with the metal of the piping to form a difficult-to-dissolve compound, so that the pipe material is shielded against the corrosive effects of the water.

JUL-H

Application:

Mixed-metal installations

Method of operation:

The polyphosphates surround the calcium and magnesium ions responsible for the hardness, preventing them from forming any more calcium/magnesium carbonate (limescale) crystals.

Notes:

- The hardness stabilisation process was checked according to the DVGW (German Technical and Scientific Association for Gas and Water) worksheet W 512 at 80 °C; the result was a certified reduction of limescale formation of more than 99 %.
- The hardness stabilisation occurs even when only small phosphate quantities are used, so that when using JUL-H, the specified strict limit values for phosphates in drinking water are adhered to.

2.3 Remote monitoring

The device can be integrated in building control systems (see chapter 6).

2.4 Materials used

The materials used are resistant to the physical, chemical and corrosive loads expected to be encountered in drinking water. They fulfil the specifications required by DIN EN 19635 ("Dosing apparatus for drinking water treatment").

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 DVGW Worksheet W 270. Metallic materials fulfil the requirements of DIN 50930-6 (Effect of metallic materials on the quality of drinking water).

2.5 Approval marks



The device complies with the technical regulations for drinking water installation according to DIN EN 806ff. and the national supplement DIN 1988ff. as well as DIN EN 1717.

It has been tested and certified by the DVGW (Deutsche Vereinigung des Gas- und Wasserfaches e. V. - Technisch-wissenschaftlicher Verein) in accordance with the requirements

- of DIN EN 14812
- of DIN EN 19635-100

(pressure range PN10). The device bears the DIN-DVGW mark as proof of certification.



The device complies with the technical regulations for drinking water installation according to DIN EN 806 ff., DIN 1988 ff. as well as DIN EN 1717. It has been tested and certified by the Technical Testing Laboratory Water (TPW) of the Swiss Gas and Water Association (SVGW) according to the requirements of DIN EN 13443-1 and DIN 19628 (pressure rating PN 16) for mechanically acting filters in the drinking water sector.

The device bears the SVGW mark as proof of certification.



The approval mark applies only for JUDO JULDOS dosing pumps that are operated with JUDO JUL mineral solution.

3 Installation by a technical service provider



CAUTION

The device may only be installed by technical service providers.

Installation of the device upstream of the water meter is forbidden.

3.1 Requirements for the place of installation

The installation room must be dry and free from frost.

The ambient temperature must not exceed 30 °C. In higher temperatures or direct sunlight, material damage may occur up to and including breakage of device parts.

A splash-proof socket is required for connection to the electrical grid, in accordance with the legal regulations for wet rooms.

3.2 Installation position

For JJD 4: Always install the device in an upright position ($\pm 5^\circ$). Otherwise, correct function of the device is not guaranteed.

For JJD 10 - 25: Position the device vertically on solid, stable and load-bearing ground, to ensure it is securely located.

At least 300 mm clearance is required above the dosing pump for maintenance purposes.

For JJD 4: there must be sufficient clearance to changeover the mineral solution container below the dosing pump (see chapter 9.2).

3.3 Power supply

Only the supplied power supply unit may be used to connect the unit to the power supply. This reduces the mains voltage for operating the electronics to a harmless low voltage of 24 V.

The mains voltage must not be interrupted (e.g. via a light switch). If the device is not permanently supplied with power, dosing of mineral solution or provision of a warning in case of faults will not be possible.

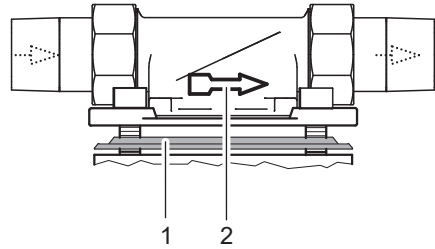


Fig. 3: Rotary flange fitting

- 1 Profile flange seal
- 2 Flow direction arrow

3.4 Installing the rotary flange fitting



CAUTION

The flange surface of the rotary flange fitting must be vertical (i.e. point forwards).

The rotary flange fitting must be fitted so that it is free from mechanical stress or strain. Otherwise mechanical damage to the pipe or the rotary flange fitting up to and including breaks can result.

The built-in rotary flange serves as a connecting element between the domestic water installation and the device. It is suitable both for horizontal and vertical pipes.

Attention: Install the built-in rotary flange in the flow direction! This is indicated by an arrow integral with the casting.



The device will not operate if it is incorrectly installed.

3.5 Mounting the device



CAUTION

For proper sealing the profiled side of the profile flange seal must point towards the rotary flange fitting (see chapter 3.4). If this is not observed, the sealing may not be perfect resulting in water escaping.

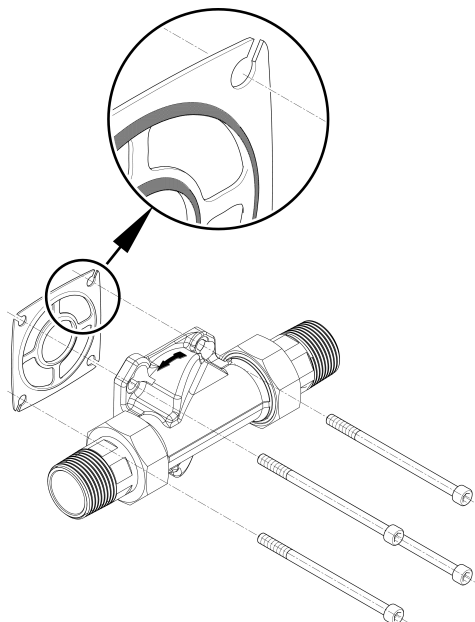
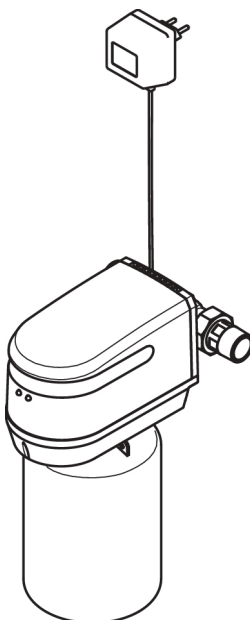


Fig. 4: Align the seal profile with the rotary flange fitting

3.5.1 Installing JJD 4

The dosing pump is connected directly as a unit in combination with the water meter.



Do not undo the screws on the rear side of the device!

Procedure:

1. Insert the heads of the four flange screws through the bayonet holes on the rotary flange fitting (see Figure 5).

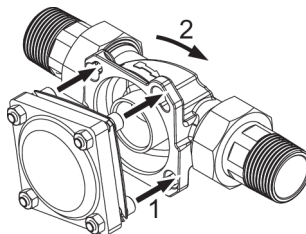


Fig. 5: Place and engage

- 1 Feed screws through
- 2 Turn clockwise to engage

- Turn the device in a clockwise direction up to the stop (see Figure 5 and Figure 6).

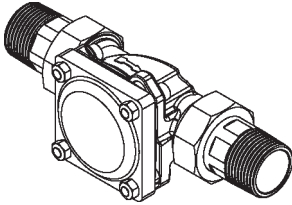


Fig. 6: Connection engaged

- Tighten the four flange screws.

Nm Select the tightening torque (approx. 4 Nm) so that the seal is effective and the device is not damaged or strained!

3.5.2 Install JJD 4 with wall mounting

If the pipes are too low or too high, or if there is not enough space, the JJD 4 models can also be mounted on the wall separately from the water meter (see Figure 7).

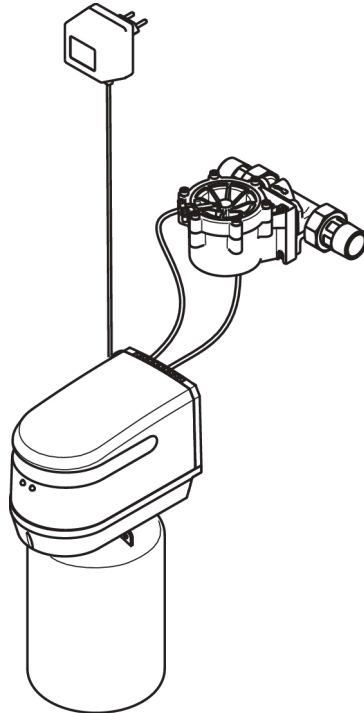


Fig. 7: Installation of JJD 4 with separate water meter

Do not undo the screws on the rear side of the device!

Procedure:

- Undo the fastening screws of the cover (A) from below (see Figure 8) and remove the cover.

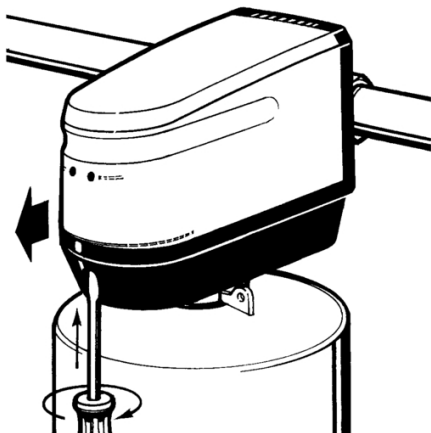


Fig. 8: Cover removal

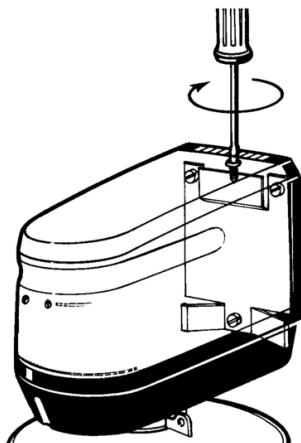


Fig. 9: Fastening on the wall mounting

2. Slightly raise the dosing pump and remove in a tilted inclination in a forwards direction.
3. Unwind the dosing hose, HE contact encoder cable and the power supply unit cable.
4. Install the water meter (see B, Figure 9) on the rotary flange fitting (fastening principle, see chapter 3.5.1).
5. Install the supplied wall mounting in a suitable location.



Minimum clearance from the bottom edge of the wall mounting to the ground or the underlying pipes:

- JJD 4: approx. 550 mm

6. Fit the dosing pump in the wall mounting. The top lug of the wall mounting grips in the corresponding cutout on the rear part (tilt-protection!).
7. Screw the device tightly in place with the screw that is located at the top on the housing between the ventilation slots.

8. Reattach the cover and screw in place (see Figure 8).
- The device is correctly installed if a uniform narrow slot can be seen between the housing and the wall.

3.5.3 Installing JJD 10 - 25

The dosing pump is placed directly on the mineral solution container. The water meter is installed separately on the installation rotary flange (see Figure 10).

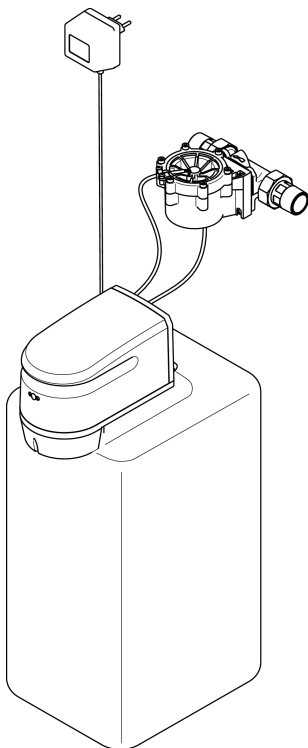


Fig. 10: Installation JJD 10 - 25
The water meter for JJD 25 differs from the illustration.

Do not undo the screws on the water meter!

Procedure:

1. Insert the heads of the four flange screws of the water meter through the bayonet holes on the rotary flange fitting (see Figure 11).

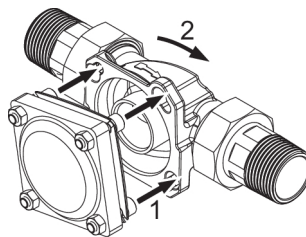


Fig. 11: Place and engage
1 Feed screws through
2 Turn clockwise to engage

2. Turn the water meter in a clockwise direction up to the stop (see Figure 11 and Figure 12).

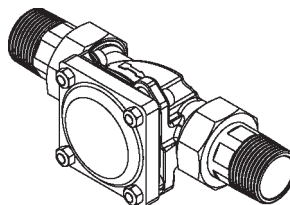


Fig. 12: Connection engaged

3. Tighten the four flange screws.

Nm

 Select the tightening torque (approx. 4 Nm) so that the seal is effective and the device is not damaged or strained!
4. Unscrew the cover of the JUL mineral solution container and remove the seal with a sharp knife.
5. Insert the pump head in the opening of the mineral solution container and place the pump housing down on the mineral solution container.

3.5.4 Fitting the dosing hose

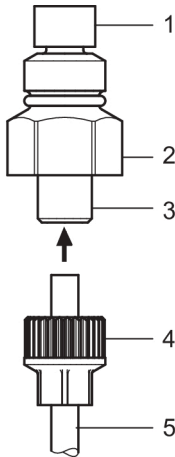


Fig. 13: Injection nozzle

- 1 Injection nozzle hose
- 2 Injection nozzle
- 3 Connector
- 4 Compression nut
- 5 Dosing hose

Procedure:

1. Push the compression nut approximately 2 cm over the dosing hose.
2. If necessary: Shorten the dosing hose.
3. Insert the dosing hose up to the stop in the connector of the injection nozzle.
4. Push the compression nut onto the connector, screw in place and tighten with an 8mm open-ended spanner.



Select the tightening torque (about 4 Nm) so that the compression nut clamps the dosing hose and seals it.

The required tightening torque is approximately reached when the open-ended spanner has been tightened until it slips over the hexagon of the compression nut.

5. Check the dosing hose for correct seating by pulling.

→ Installation of the dosing hose is completed.

Undo the dosing hose:

- Undo the compression nut with an open-ended spanner and screw off.

Refitting the dosing hose:

- Cut off the dosing hose just after the indentation and install according to the manual.



The indentation in the dosing hose results from tightening of the compression nut.

3.5.5 Connecting the water meter (only for JJD 25)

Procedure:

1. Remove cover (see Figure 8).
2. Lead the cable of the flow sensor that is located on the water meter from the rear into the pump housing and forwards under the electrical circuit.
3. Plug the three individual connectors of the sensor cable onto the pins provided on the electronic circuit (see 9.3).
4. Press the cable into the slot of the cable winder on the inside of the housing rear wall for strain relief and wrap it at least once.

4 Commissioning

The following steps are necessary to start up the device:

- For JJD 4: Screw on the JUL mineral solution container (see chapter 4.1)
- Bleeding and flushing the water meter (see chapter 4.2).
- Plug the power supply unit in.

ATTENTION: Leave the last winding of the mains cable as a strain relief on the winding device.

Once commissioning is complete, the device starts to operate.

4.1 For JJD 4: Screw on the mineral solution container

Procedure:

1. Unscrew the lid of the JUL mineral solution container.
2. Remove the seal with a sharp knife.
3. Push the mineral solution container on from below over the pump head and screw home on the pump housing.

i Only plug in the mains plug when the mineral solution container is screwed on.

4.2 Bleeding and flushing the water meter

Procedure:

1. Open the shut-off valve upstream of the device.
2. Then immediately open the closest tap downstream of the device and allow the water to run for a few seconds.
→ Air and residues escape with the water flow.
3. Reclose the tap downstream of the device.

i The bleeding and flushing process should also be performed when commissioning the device after maintenance work.

5 Operation

5.1 Setting the dosing quantity

Three different settings can be selected for the dosing of JUL mineral solution into the drinking water:

- minimal (*min*)
- normal (*norm*)

- maximum (*max*)

i As supplied, the *max* setting is activated.

Recommendation:

- Initially (until the first two fillings of the mineral solution container have been used up), select the *maximum* setting so that a closed protective layer is quickly built up.
- Then optionally reduce to *normal* or *minimum*, as required.

If signs of corrosion still occur (e.g. brown water), the dosing quantity must be increased again.

How to change the dosing quantity:

1. Pull the power supply unit out of the socket.
2. Remove cover (see Figure 15).
3. Change the DIP switch on the electronic circuit to the desired dosing rate *min*, *norm* or *max* (see Figure 14).

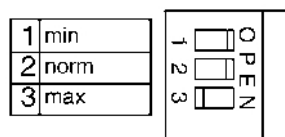


Fig. 14: DIP switch

4. Reattach the cover.
5. Plug the power supply unit into the power outlet.
→ The dosing quantity has been saved.

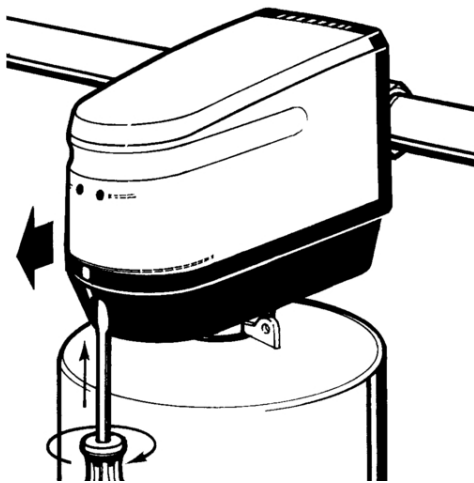


Fig. 15: Cover removal

5.2 Selection of the appropriate JUL mineral solution / tablets

The following criteria are decisive for selection of the JUL mineral solution:

- the hardness range of the water
- the material of the piping.

ATTENTION:

- only JUL mineral solutions supplied by JUDO may be used
- only use JUL mineral solutions assigned to water hardness range (see Tab. 1: JUL mineral solution - available types).

If this requirement is ignored, the device will not work.

i The mineral solutions JUL-W and JUL-H are available as mineral tablets for dissolving (see chapter 5.2.1). The mineral tablets are packed in cardboard thus contributing to a reduction in plastic waste by preventing the use of the plastic packaging required for mineral solution.

Pipe	Hardness range	JUL mineral solution
Galvanized	1 and 2, as well as downstream of the water softening system	JUL-W-Tabs ^{1) 2)}
Mixed installation	2 and 3	JUL-H-Tabs ¹⁾

Table 1: JUL mineral solution - available types

- 1) Tabs = tablet form
- 2) Not available for Switzerland

5.2.1 JUL mineral tablets

For models JJD 4, JJD 10 and JJD 25 the following mineral solutions are available as mineral tablets for dissolving in water.

- JUL-W (mineral tablets: JUL-W-Tabs for 6 or 25 litres solution)
- JUL-H (mineral tablets: JUL-H-Tabs for 6 or 25 litres solution)

i For the use of the mineral tablets, a dosing solution container is included to dissolve the mineral tablets.

The tablets must always be dissolved as a complete package. Removal of individual tablets for production of partial quantities is not permitted for hygiene reasons and also because it is not effective.

A tablet dissolving device with a detailed manual is available for dissolving the tablets (see chapter 9.4).

5.3 Refilling the mineral solution container

Once the filling level falls below the minimum level,

- the yellow warning light comes on
- an audible signal can be heard.

Fill up the mineral solution container with new mineral solution as soon as possible.

Procedure:

1. Pull the power supply unit out of the socket.
2. Remove the empty mineral solution container.
3. Prepare new mineral solution according to the instructions delivered with the mineral solution tablets.
4. For JJD 4: push the filled mineral solution container on from below over the pump head and screw home on the pump housing.
For JJD 10 - 25: insert the pump head in the opening of the mineral solution container and place the pump housing down on the mineral solution container.
5. Plug the power supply unit into the power outlet.

→ The device restarts.

i If no mineral solution tablets are available, the empty dosing container must be filled with water and connected to prevent drying out of the pump head.

5.4 Protection against third-party access

The device can be secured using a tamper-proof seal. Unauthorised filling of foreign substances into the mineral solution container is then no longer possible.

Suitable lugs are provided on the device and mineral solution container for attachment of a seal.

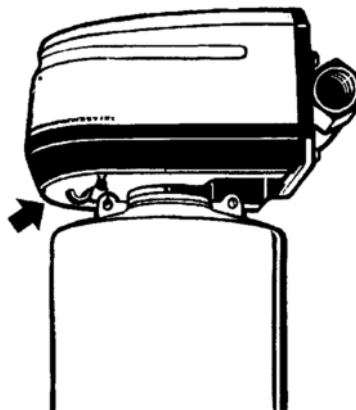


Fig. 16: JJD 4 - securing lug

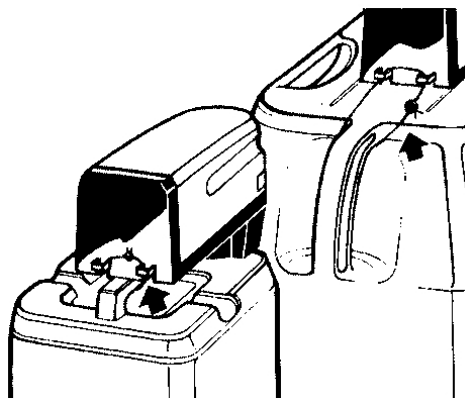


Fig. 17: JJD 25 - securing lug

5.5 Conversions, changes

⚠ WARNING
Unauthorised conversions and changes are forbidden for safety reasons. These can impair the functioning of the device, leading to leaks and, in the worse case scenario, to bursting of the device.

⚡ **Only the supplied power supply unit may be used to connect the unit to the power supply. This**

reduces the mains voltage for operating the electronics to a harmless low voltage of 24 V.

In the event of repairs, printed test marks only remain valid when original spare parts are used.

5.6 Temporary removal of the device (technical service provider)



WARNING

In the event of temporary removal of the device

- **Protect the flange surfaces against damage to ensure proper sealing.**
- **Protect the device from dirt so as not to impair drinking water hygiene.**
- **Store the device in a cool and dry place to prevent damage caused by freezing water and possible resultant loss of leak-tightness.**

If no more JUL mineral solution is to be dosed for a long time:

- dispose of the residual quantity in the mineral solution container.
- thoroughly flush out the mineral solution container with water.
- then fill the mineral solution container with pure water and allow the device to continue operation with it for some time.

To remove the device

1. Unplug the power supply unit.
2. Shut off the water supply to the device (close the stopcock or switchover the bypass valve).
3. Arrange for a technical service provider to remove the device.

The device must be bled and flushed prior to restarting:

- Open the stopcock or the bypass valve.
- Open a tap downstream of the device. After a flushing water quantity of 5 litre, the device is bled.
- Connect the JUL mineral solution container and plug in the power supply unit.

The device then automatically restarts.

5.7 Maintenance, repair, spare parts



CAUTION

Before performing work on the device that goes beyond pure operational use, the device must be depressurised. If this is ignored, the result may be uncontrolled egress of water resulting in water damage.

The device may only be repaired by technical service providers or JUDO customer service.

Only use original spare parts for repairs.

6 Remote transmission of messages

The device offers the following options:

- Forwarding of status or fault messages via the floating output (e.g. connection with building control system (see chapter 6.1 and 6.2))

6.1 Forwarding status and fault messages over floating outputs



The device may only be installed by technical service providers.

The power supply unit must be disconnected for performance of the electrical installation.

Only low voltages can be used for the remote transmission of the status or fault indication via the floating output.

**Switching voltage: maximum 24 V
Amperage: maximum 1 A**

A connected terminal indicates a message in the following cases:

- if the mineral solution container is empty
- if a device fault exists.

i The contacts of the floating relay are shown in the zero-current state (open) in chapter 9.3.

The fault message cable is available as an accessory and is not included in the scope of supply (see chapter 9.4)

6.2 Integration in building control systems

The device can be integrated into a building control system (e.g. EIB / KNX, LCN or LON) via the floating signal relay.

Accordingly, the potential-free relay is connected to a binary bus coupler. In this way, fault or status messages can be forwarded to the building control system.

7 Servicing

7.1 Maintenance

To ensure the process operates successfully as long as possible, regular inspection and routine servicing of the device are essential. Where home automation is concerned, this is governed by DIN EN 806-5.

We recommend the conclusion of a maintenance contract, which is the best way to ensure a good operating function, even beyond the warranty period. The skilled tradesmen or the factory customer service are suitable partners for regular maintenance work and the supply of consumables and wear materials as well as for possible repairs.

7.1.1 Necessary maintenance intervals

To prevent loss of warranty, the following checks and maintenance are necessary no later than at the specified intervals:

- Visual inspection by the operator: every 2 months (see section Two-monthly inspection by the operator, page 21)
- Maintenance by customer service: yearly (see section Annual maintenance by JUDO customer service or a technical service provider, page 22)

Two-monthly inspection by the operator

The device operator must check the following at least every 2 months:

- The mineral solution level (if necessary, refilling of the empty mineral solution container; see chapter 5.3)
- The leak-tightness of the device (escaping water)
- Device damage (defective parts must be replaced by customer service)

The manufacturer's instructions concerning shelf life and storage of JUL mineral solution must be observed.

Annual maintenance by JUDO customer service or a technical service provider

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

7.2 Maintenance adhesive label



The maintenance sticker on the device serves as a reminder of the next maintenance date and should be marked by the installer after installation.

7.3 Function check

If the device is functioning correctly,

- the yellow warning light flashes with every piston stroke during drawing of water.
- the JUL mineral solution decreases in the dosing container.

7.4 Repair by JUDO customer service or a technical service provider, spare parts



WARNING

The device may only be repaired by technical service providers or JUDO customer service.

Only use original spare parts for repairs.

Before performing work on the device that goes beyond pure operational use, the device must be depressurised. If this is ignored, the result may be uncontrolled egress of water resulting in water damage.

8 Fault



WARNING

The device may only be repaired by technical service providers or JUDO customer service.

Fault	Cause	Remedy
Red warning light illuminates.	Device fault	<ol style="list-style-type: none"> 1. Pull the power supply unit out of the socket. 2. Inform the installer or the closest customer service point.
The yellow warning light comes on and an audible signal is output.	Dosing container empty	Fill mineral solution container (see chapter 5.3).
JUL mineral solution is frozen.	Frost	Place the dosing container in hot water (or in a warm room) as long as necessary prior to start up until the JUL mineral solution reliquefies.

9 Technical data

Dosing pump

JUDO JULDOS

Short designation: JJD

The water to be filtered must comply with the European Drinking Water Directive.

Information about:	JJD 4	JJD 10	JJD 25
Pipe connection [inch]	1"	1¼"	1½"
Nominal pressure ¹⁾	PN 10	PN 10	PN 10
Operating pressure max. ¹⁾	8 bar	8 bar	8 bar
Working range in compliance with DIN EN 14812 and DIN 19635-100: Upper/lower working limit (m ³ /h)	0,06/4	0,08/10,2	0,08/24
Suitable for max. water throughput of [m ³ per month] ²⁾	60	200	400
Pressure loss at upper working limit [bar]	0,8	0,8	0,8
Max. water flow per hour [m ³]	4	11	25
Mineral solution container volume [litre]	6	25	25
Treated water volume per mineral solution container [m ³]	48 - 80	200 - 330	200 - 330
Water temperature and ambient temperature	max. 30 °C		
Threaded connection according to	DIN EN 10226-1		
Power connection	230 V AC / 50 Hz		
Power consumption Operation	3 W	3 W	3 W
Dosing power consumption	6 W	12 W	24 W
Operating weight	4,2 kg	-- ³⁾	-- ³⁾
Order no.	8309075	8309076	8309077

- 1) The rated pressure indicates the pressure range that the dosing pump must comply with in accordance with DIN EN 14812 and DIN 19635-100. The maximum operating pressure is lower to ensure the optimum function of the dosing pump.
- 2) If no consumption data are available, a water consumption of 10 m³ per month and residential unit can be assumed for calculations. Dependent on the appliances in a home, the water consumption of one person is between 3.5 - 7 m³ per month.
- 3) The specification is not relevant from an installation point of view because this model is generally free standing and only the water meter is installed in the pipe.

9.1 Wall mounting installation dimensions

Minimum installation height from the floor to the rotary flange fitting

JJD 4
590 mm

Table 2: Wall mounting installation dimensions for JJD 4

(see also chapter 3.5.2)

9.2 Installation dimensions

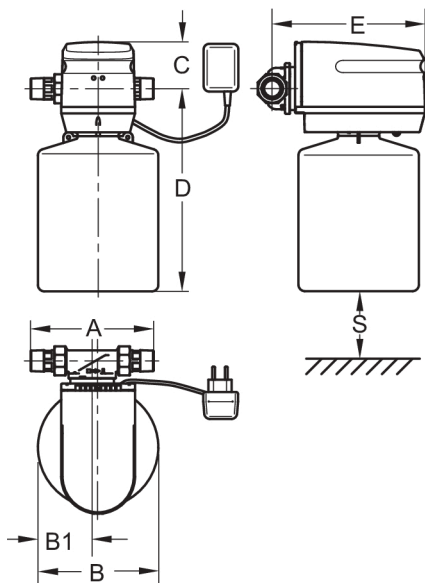


Fig. 18: JJD 4 installation dimensions with integrated water meter

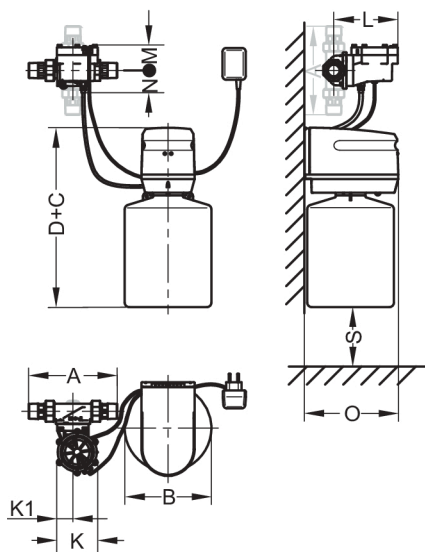


Fig. 19: JJD 4 installation dimensions with external water meter

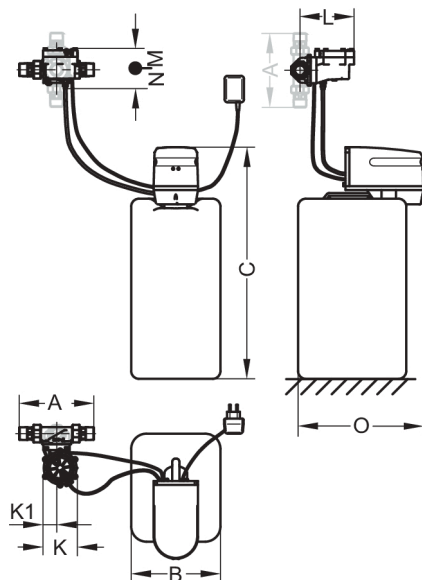


Fig. 20: JJD 10 installation dimensions

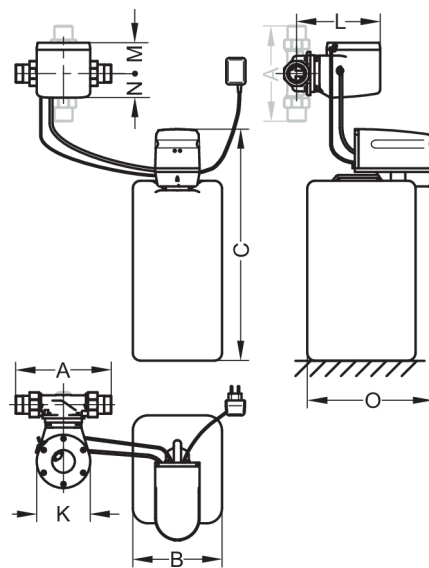


Fig. 21: Installation dimensions JJD 25

	JJD 4	JJD 10	JJD 25
A	195	230	252
B	195	235	235
B1	90	--	--
C	75	590	590
D	330	--	--
E	245	--	--
K	90	90	145
K1	40	40	--
L	145	150	220
M	60	60	85
N	50	50	65
O	210	330	330
P	1400		
S	280	--	--

Table 3: Installation dimensions in [mm]

- A Installation length
- B Device width
- B1 Device width to the middle of the rotary flange fitting
- C Height above the pipe middle resp. device height
- D Height below the pipe middle
- E Installation depth up to the pipe middle
- K Water meter width
- K1 Water meter width to the middle of the rotary flange fitting
- L Water meter installation depth up to the pipe middle
- M Water meter height above the pipe middle
- N Water meter height below the pipe middle
- O Device installation depth
- P Hose length
- S Minimum height for maintenance purposes

9.3 Electronic control unit

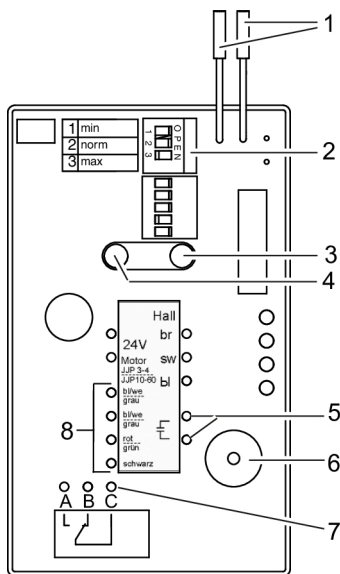


Fig. 22: Electronic control unit

- 1 Connections for empty signal
- 2 DIP switches for setting the dosing capacity
- 3 Yellow warning light (flashing) - operation
- 4 Red warning light - fault
- 5 Motor capacitor connections
- 6 Audible signal transmitter
- 7 Connections for external fault signal
Max. permissible load 1A, 24V
- 8 Motor connections

Connection	JJD 4	JJD 10 - 25
1	blue/white	grey
2	blue/white	grey
3	red	green
4	black	black

Table 4: Motor connections

9.4 Accessories

- Signal transmission cable for floating transmission of empty or fault signals (order no. 2340051)

- JJD 4 - 10: JUDO QUICKSET series JQR (order no. 8250041) for series connection of two devices, e.g. filter and dosing pump
- JJD 4 - 10: JUDO Bypass valve JQX (order no. 8735210)
- Mineral tablet dissolving device (order no. 8130100)

Recommendation:

From approximately 14 °dH water hardness (hardness range 3) use a water softening system for partial softening to dilute the water to a residual hardness of about 8 °dH.

Dosing downstream of the water softening system:

Pipes	JUL mineral solution
Galvanized	Type <i>JUL-W</i>
Mixed-metal installations	Type <i>JUL-W</i>

If there is a long-term change in water hardness due to a lack of regeneration salts, the JUL mineral solution will no longer correspond to the water composition. In extreme cases this can result in malfunctions.

If the water softening system is placed out of service or switched to bypass, then the dosing pump must likewise be removed from service (see chapter 5.6).

10 Disposal

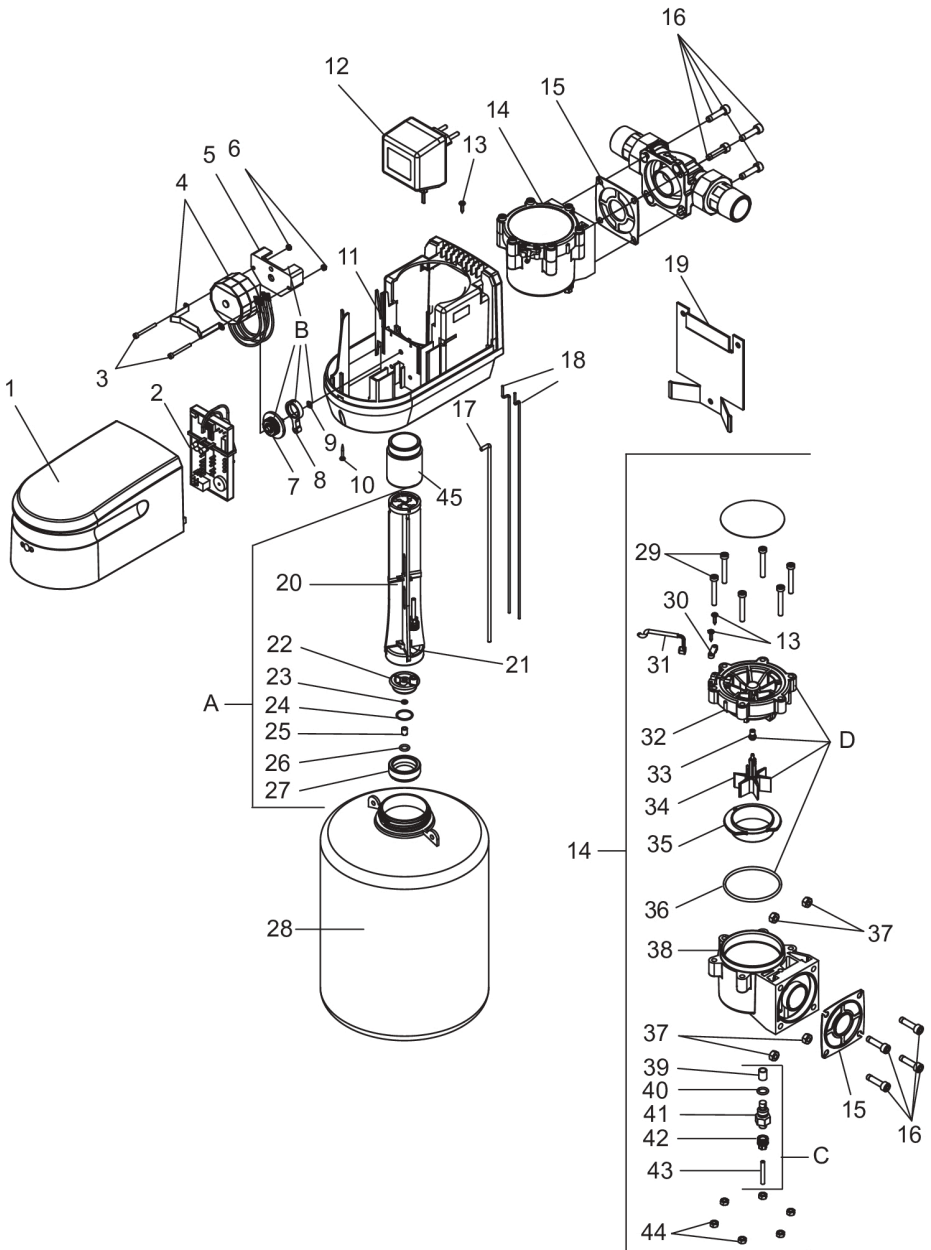
Packaging waste is to be sent to the local recycling system.

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.



11 Spare parts

JJD 4



Spare parts list JJD 4

Item	Designation	Pcs	Order No.	BU ¹⁾ / Pcs
A	Wear part set <i>Pump head</i> ***	1	2609103	100
B	Wear part set <i>Eccentric</i> ***	1	2120005	27
C	Wear part set <i>Injection nozzle and dosing hose</i> ***	1	2120111	46
D	Spare part set <i>Water meter</i>	1	2201506	49
1	Dust hood JJD 4	1	2202150	98
2	Dosing circuit	1	2609147	380
3	Cylinder screw M3×30	2		
4	Synchronous motor with frame JJD 4	1	2120255	251
5	Gear console	1		
6	Hexagonal nut M3	2		
7	Gear eccentric	1		
8	Piston-rod	1		
9	Small shim	1		
10	Sheet metal screw 2,9×19	1		
11	Pump holder	1		
12	Power supply unit 24 V AC	1		
13	Sheet metal screw 2,9×13	3		
14	Water meter, complete	1	2120096	491
15	Profile flange gasket	1		
16	Cylinder screw M6×25	4		
17	JJD 4 piston rod	1		
18	Empty signalling electrode JJD 4	2		
19	Wall mounting	1		
20	Pump console	1		
21	Compression nut	1		
22	Pump head insert	1		
23	O-ring 3,7×1,6	1		
24	O-ring 16×1,5	1		

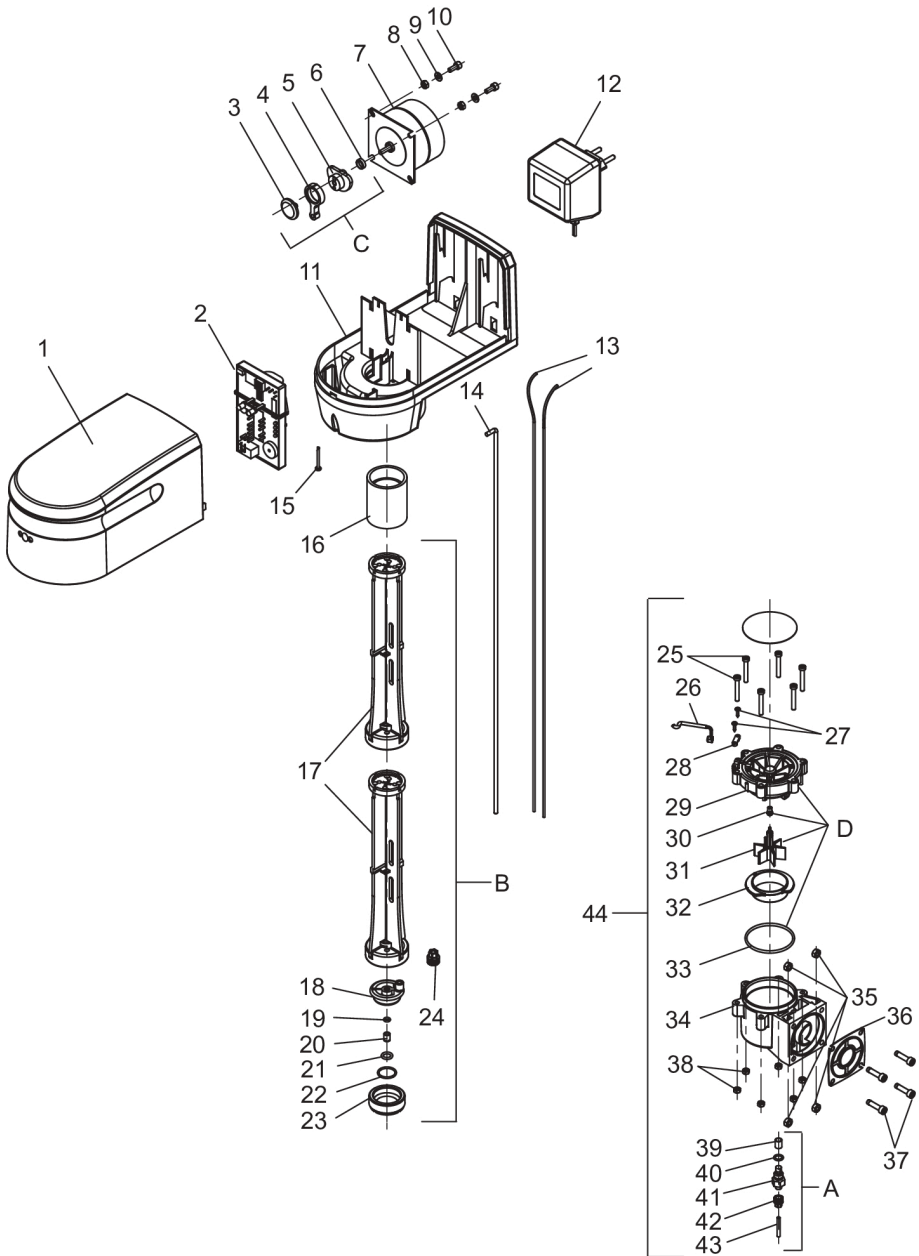
Item	Designation	Pcs	Order No.	BU ¹⁾ / Pcs
25	Spacer sleeve	1		
26	O-ring 7,5×2	1		
27	Pump head cover	1		
28	Dosing container 6 litres	1	2120206	26
29	Cylinder screw M5×35	6		
30	Strain-relief bracket	1		
31	HE contactor JJD 4, JJD 10	1	2120276	59
32	Water meter cover	1		
33	Bearing bushing	1		
34	Water meter impeller	1		
35	Water meter housing insert	1		
36	O-ring 60×3	1		
37	Hexagonal nut M6	4		
38	Water meter housing	1	2120098	125
39	Injection nozzle hose	1		
40	O-ring 9×2	1		
41	Injection nozzle	1		
42	Compression nut	1		
43	Dosing hose	1		
44	Hexagonal nut M5	6		
45	Console extension	1	2990314	22

1) AU = Accounting unit (items without AU are only available in a set)

2) AU not yet specified at the time of going to press

Replacement interval: *** = 3 years

JJD 10



List of spare parts JJD 10

Item	Designation	Pcs	Order No.	BU ¹⁾ / Pcs
A	Wear part set <i>Injection nozzle and dosing hose</i> ***	1	2120111	46
B	Wear part set <i>Pump head</i> ***	1	2120149	105
C	Wear part set <i>Eccentric</i> ***	1	2120022	39
D	Spare part set <i>Water meter</i>	1	2201506	49
1	Dust hood JJD 10	1	2202151	68
2	Dosing circuit	1	2609340	395
3	Counter-washer	1		
4	Piston-rod	1		
5	Eccentric	1		
6	Support ring	1		
7	JJD 10 synchronous motor	1		
8	Disc 4.3	2		
9	Hexagonal nut M4	2		
10	Cylinder screw M4×10	2		
11	Pump holder	1	2609301	167
12	Power supply unit 24 V AC	1		
13	Empty signalling electrode JJD 10	2		
14	JJD 10 piston rod	1		
15	Serrated screw 2.9×25 type 1	1		
16	JJD 10 console extension	1		
17	Pump console	2		
18	Pump head insert	1		
19	O-ring 3,7×1,6	1		
20	Spacer sleeve	1		
21	O-ring 7,5×2	1		
22	O-ring 16×1,5	1		
23	Pump head cover	1		
24	Compression nut	1		

Spare parts

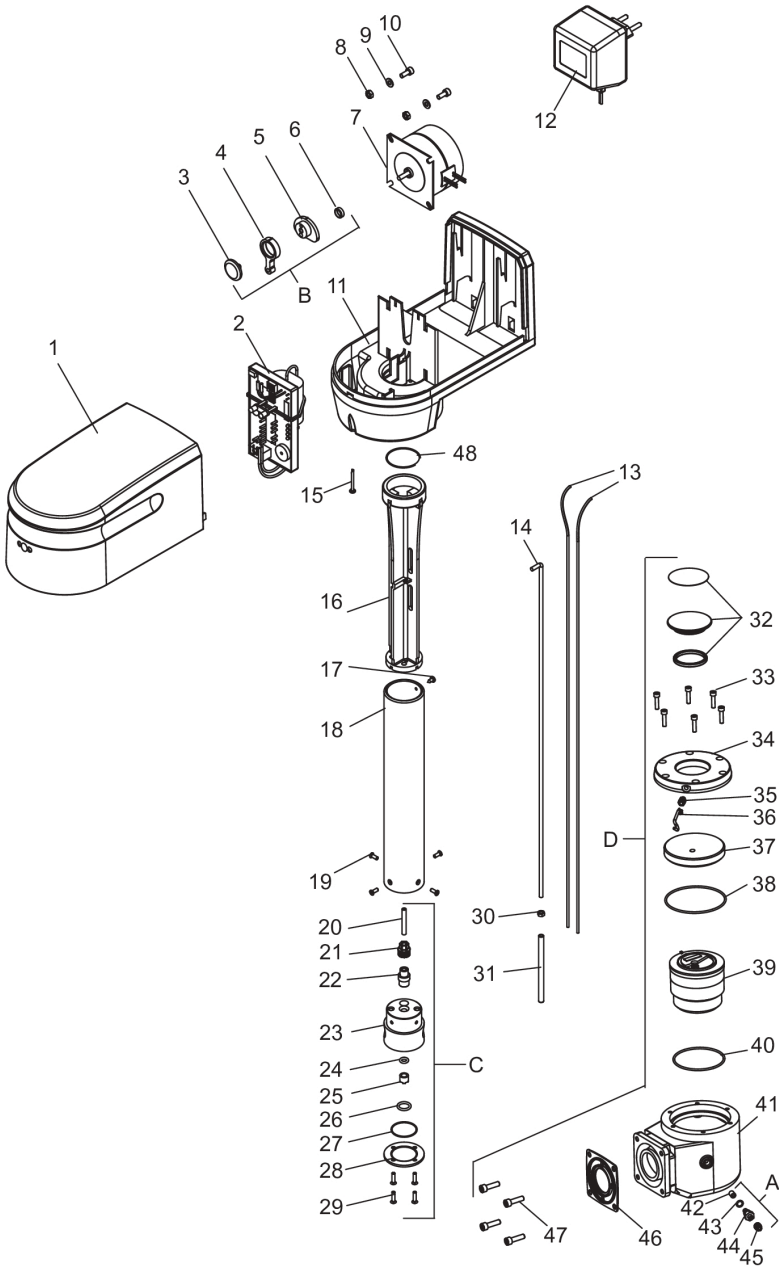
Item	Designation	Pcs	Order No.	BU ¹⁾ / Pcs
25	Cylinder screw M5×35	6		
26	HE contactor JJD 4, JJD 10	1	2120276	59
27	Sheet metal screw 2,9×13	2		
28	Strain-relief bracket	1		
29	Water meter cover	1		
30	Bearing bushing	1		
31	Water meter impeller	1		
32	Water meter housing insert	1		
33	O-ring 60×3	1		
34	Water meter housing	1	2120099	125
35	Hexagonal nut M6	4		
36	Profile flange gasket	1		
37	Cylinder screw M6×25	4		
38	Hexagonal nut M5	6		
39	Injection nozzle hose	1		
40	O-ring 9×2	1		
41	Injection nozzle	1		
42	Compression nut	1		
43	Dosing hose	1		
44	Water meter, complete	1	2120097	513

1) AU = Accounting unit (items without AU are only available in a set)

2) AU not yet specified at the time of going to press

Replacement interval: *** = 3 years

JJD 25



List of spare parts JJD 25

Item	Designation	Pcs	Order No.	BU ¹⁾ / Pcs
A	Wear part set <i>Injection nozzle and dosing hose</i> ***	1	2120111	46
B	Wear part set <i>Eccentric</i> ***	1	2120022	39
C	Wear part set <i>Pump head</i> ***	1	2120151	252
D	Spare part set <i>Water meter, complete</i>	1	2609414	944
1	Dust hood JJD 25	1	2202152	68
2	Dosing circuit	1	2609439	460
3	Counter-washer	1		
4	Piston-rod	1		
5	Eccentric	1		
6	Support ring	1		
7	JJD 25 synchronous motor	1		
8	Hexagonal nut M4	2		
9	Disc 4.3	2		
10	Cylinder screw M4×10	2		
11	Pump holder	1	2609301	167
12	Power supply unit 24 V AC	1		
13	Empty signalling electrode JJD 25	2		
14	JJD 25 piston rod	1		
15	Serrated screw 2.9×25 type 1	1		
16	Pump console	1		
17	Sheet metal screw 2,9×6,5	1		
18	JJD 25 pump pipe	1		
19	Countersunk screw M3×8	4		
20	Dosing hose	1		
21	Compression nut	1		
22	Hose connection, straight	1		
23	Pump head	1		
24	O-ring 5×2	1		
25	Spacer sleeve	1		


Item	Designation	Pcs	Order No.	BU ^{1)/} Pcs
26	O-ring 10×2	1		
27	O-ring 24×1	1		
28	Pump head cover	1		
29	Countersunk screw M3×12	4		
30	Hexagonal nut M3,5	1		
31	Piston	1		
32	Plug, complete	1	2120154	25
33	Cylinder screw M6×25	6		
34	Water meter housing cover	1		
35	Cable gland	1		
36	HE contact sensor JJD 25	1	2120143	49
37	Water meter inspection glass	1	2120190	115
38	O-ring 105×3	1		
39	Water meter brass insert	1	2120188	245
40	O-ring 88×3	1		
41	Water meter housing	1		
42	Injection nozzle hose	1		
43	O-ring 9×2	1		
44	Injection nozzle	1		
45	Compression nut	1		
46	Profile flange seal	1		
47	Cylinder screw M8×30	4		
48	O-ring 30×1,2	1		

1) AU = Accounting unit (items without AU are only available in a set)

2) AU not yet specified at the time of going to press

Replacement interval: *** = 3 years

12 EC Conformity Declaration

 Wasser- Aufbereitung	EC Conformity Declaration	Document no. 461 / 08.21
---	----------------------------------	-----------------------------

Manufacturer: JUDO Wasseraufbereitung GmbH

Address: Hohreuschstraße 39 - 41
D-71364 Winnenden

Product description: JUDO JULDOS JJD 4, JJD 10, JJD 25
Dosing pump

- | | | |
|-------------------------|--|------------------------------|
| • EC Directive: | Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) | 2011/65/EU |
| • EC Directive: | Elektromagnetic 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 Standards: | Safety of power transformers, power supplies, reactors and similar products | EN 61558-1 |

The observance of the mentioned directives and EMC requirements for the use of the device in household, commercial and industrial areas as well as the application of the indicated standards are hereby confirmed.

Issuer: JUDO Wasseraufbereitung GmbH

Place and date: Winnenden, 20 August 2021

Legally binding signature:


.....
JUDO Wasseraufbereitung GmbH

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

13 Customer service

DE	JUDO Wasseraufbereitung GmbH Postfach 380 • D-71351 Winnenden Phone +49 (0)7195 / 692-0 E-mail: info@judo.eu • judo.eu
AT	JUDO Wasseraufbereitung GmbH • Niederlassung Österreich Josef-Sandhofer-Straße 15 • A-2000 Stockerau Phone +43 (0)22 66 / 6 40 78 • Fax +43 (0)22 66 / 6 40 79 E-mail: info@judo-online.at • judo-online.at
CH	JUDO Wasseraufbereitung AG Industriestrasse 15 • CH-4410 Liestal Phone +41 (0)61 906 40 50 • Fax +41 (0)61 906 40 59 E-mail: info@judo-online.ch • judo-online.ch
BENELUX	JUDO Wasseraufbereitung GmbH • Filiaal - Filiale Benelux Laarbeeklaan - Av. du Laerbeek, 72 A1 • B-1090 Brussel-Bruxelles Phone +32 (0)24 60 12 88 • Fax +32 (0)24 61 18 85 E-mail: info.benelux@judo.eu • judo.eu
FR	JUDO France SARL 76 Rue de la Plaine des Bouchers (Technosud) • F-67100 Strasbourg Phone +33 (0)3 88 65 93 94 • Fax +33 (0)3 88 65 98 49 E-mail: info@judo.fr • judo.fr

Installed by / on:

All pictorial, dimensional and implementation information correspond to the date of going to press. We reserve the right to make changes due to technical progress and continuing development. Model and product claims cannot be lodged.