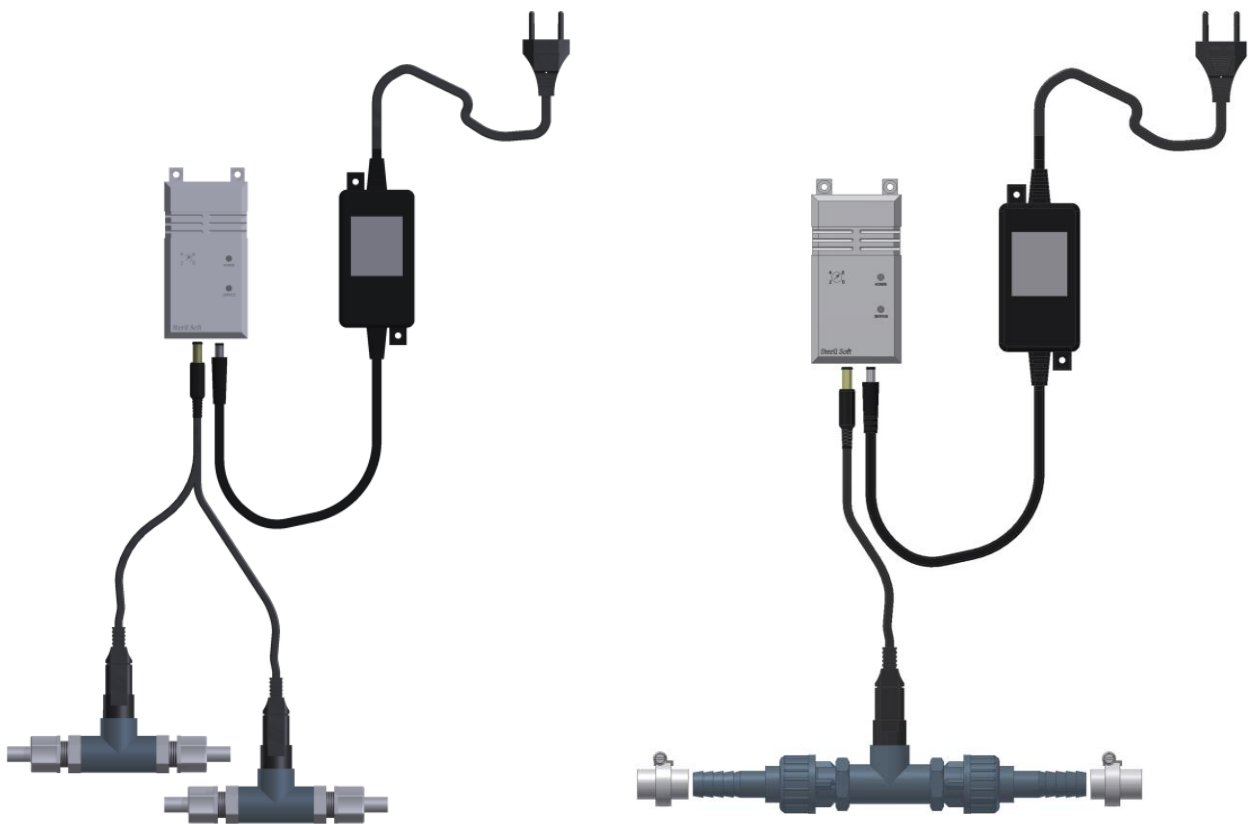




Installation and operating instructions

JUDO disinfection unit JCLE 2, 2 D, 2 E, 5 E



Please transfer to the operator.
Read before installation and commissioning!





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Dear customer,

Thank you for the confidence you have shown in us by purchasing this product. In purchasing this JUDO disinfection unit you have procured a state of the art product.

Our aim is that you remain with us as a satisfied customer. Therefore we kindly ask that if you have any questions concerning your JUDO disinfection unit or if you have any general questions concerning water treatment, then please contact our field service representative or directly contact either our works in Winnenden (Germany), subsidiary in Austria or JUDO Wasseraufbereitung AG in Switzerland.

Nevertheless, if difficulties occur with your JUDO disinfection unit, please contact your responsible customer service representative.

**JUDO Wasseraufbereitung GmbH
Winnenden Works**

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D-71364 Winnenden
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**JUDO Wasseraufbereitung GmbH
Austrian subsidiary**

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Internet: www.judo-online.at

JUDO Wasseraufbereitung AG

Address: Industriestrasse 15
CH-4410 Liestal
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Fax: +41 (0)61-90640-59
Email: info@judo-online.ch
Internet: www.judo-online.ch



1 About these installation and operating instructions

These installation and operating instructions should simplify getting to know your JUDO disinfection unit and inform you of its intended applications. The installation and operating instructions contain important information so that you can use the JUDO disinfection unit, safely, professionally and economically. They contain basic information that must be observed during installation, operation and maintenance. Observing this information will help to avoid dangers, reduce repair costs and increase the reliability and service life of your JUDO disinfection unit.

Alongside the installation 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.

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.



The installation and operating instructions must always be available at the place of use of the JUDO disinfection unit and must be kept in a good, legible state!

All persons involved in the installation, commissioning, operation, maintenance, service and repair of the JUDO disinfection unit, must be appropriately qualified and trained and must have carefully read and understood these installation and operating instructions and also any separate installation and operating instructions for the relevant water softening system!

1.1 Symbols and their meaning

Symbol	Meaning	Symbol	Meaning	Symbol	Meaning
	Warning Risk of injuries!		General information and user tips!		Read and understand the installation and operating instructions!
	Attention Risk of malfunctions or damage!		Disconnect from the mains before working on the device!		
	Warning Danger due to electric voltage!		Correct disposal of scrap!		

Tab. 1: Symbols and their meaning



1.2 General safety instructions



Warning

Any working methods that might endanger safety must be avoided!

Non-observation of these installation and operating instructions and the safety instructions herein may endanger persons, as well as the environment and the JUDO disinfection unit itself!

The safety instructions do not take into account

- Random happenings and events that may occur during installation, operating and maintenance.
- Location related safety conditions for the observance of which the operator is responsible, even for contract installation personnel.



Attention

Unauthorised conversions and changes to the JUDO disinfection unit or tampering with system components are forbidden for safety reasons!

Do not perform any changes, make any additions or carry out any conversions that could impair safety without the manufacturer's written approval!

Never remove safety equipment or deactivate it by making changes to the JUDO disinfection unit!

The safety instructions of these installation and operating instructions must be observed without fail, additional industry-wide and in-house safety instructions remain in force!

Only operate the JUDO disinfection unit with the caps and covers of all device components correctly closed!

Fault-free operation of the JUDO disinfection unit is only ensured if original spare parts and components are used in the combination described in these installation and operating instructions, otherwise there is a risk of malfunctioning or damage!

Only allow authorised technical personnel to carry out repairs!

All work on electrical device components must only be performed by qualified electricians certified according to an approved national scheme!

The electrical device components must be checked regularly!

Loose connections must be tightened immediately and damaged device components immediately replaced!



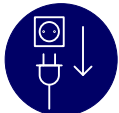
1.2.1 Safety instructions for electrical work



Warning

Switch off the power supply before working on device components; if this is ignored severe bodily injuries or even death may result!

All work which may possibly need to be performed while the system is live must only be performed by qualified electricians certified according to an approved national scheme!



Switch off the power supply before working on device components!



Attention

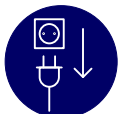
Ensure that electronic or electrical device components are not damaged by splash water or similar!

1.2.2 Safety instructions for mechanical working



Warning

Before cleaning, maintenance or repair work on the JUDO disinfection unit ensure that the relevant water softening system is hydraulically depressurised!



Switch off the power supply before working on device components!



These activities must only be performed by JUDO customer service or authorised technical personnel, who know and understand the overall system of the JUDO disinfection unit and its environment!



2 Warranty

The warranty is valid in accordance with our general terms of sale and delivery only if

- The JUDO disinfection unit is used solely for its intended use and its components are not opened, tampered with or incorrectly treated in any other way,
- Safety guards are used and these are not manipulated or removed,
- The operating conditions correspond to the technical specifications,
- Inspection and maintenance are performed according to EN 806-5 2012, in the course of the inspection and maintenance of the relevant water softening system,
- Repairs are only performed with original spare parts by JUDO customer service or authorised technical personnel.
- All work must only be performed by qualified and authorised technical personnel.

2.1 Duties of the operator

The operator of the JUDO disinfection unit is responsible for the following:

- Only allow qualified and authorised technical personnel to perform inspection, operation, maintenance, service and repair as well as the training of the operating personnel.
- Performance of inspection and instigation of scheduled servicing as part of the maintenance of the corresponding water softening system at the prescribed intervals (adhere to EN 806-5:2012).
- Constant availability of the installation and operating instructions at the place of use of the JUDO disinfection unit.
- Perform regular visual inspection of the JUDO disinfection unit according to the conditions of use and the hazard potential to prevent leaks and damage and also check for correct functioning.

2.2 Transport, storage, disposal



Attention

Transport the JUDO disinfection unit with care, do not transport when there is a risk of frost, also protect against dust and dirt effects!



Attention

Dry, frost-proof storage location with aggressive atmosphere!

Protect the JUDO disinfection unit against the effects of coarse dust or dirt, also avoid direct sunshine!

Permissible storage temperature: +4°C to +40°C!



Electrical and electronic scrap must be disposed in an environmentally friendly way by a responsible disposal facility or specialist company!



3 Product information

3.1 Manufacturer

JUDO Wasseraufbereitung GmbH

Hohreuschstraße 39-41
D-71364 Winnenden
E-Mail: info@judo.eu
Internet: www.judo.eu

3.2 Models

Designation	Model	Order no.	For system type
JUDO Disinfection unit	JCLE 2	8395017	JUDO JUDOMAT single water softening systems JM 2-3 Z-E (time controlled)
			JUDO JUDOMAT single water softening systems JM 2-3 WZ-E (quantity controlled)
	JCLE 2 D	8390092	JUDO JUDOMAT alternating water softening systems JM 2-3 WZ-D (quantity controlled)
			JUDO JUDOMAT parallel water softening systems JM 2-6 WZ-P (quantity controlled)
	JCLE 2 E	8390038	JUDO JUDOMAT single water softening systems JM 4 Z-E (time controlled)
			JUDO JUDOMAT single water softening systems JM 4-6 WZ-E (quantity controlled)
			JUDO JUDOMAT alternating water softening systems JM 2-10 D (quantity controlled)
	JCLE 5 E	8395037	JUDO JUDOMAT-DX single water softening systems JM-DX 1000-2000 E (quantity controlled)
			JUDO JUDOMAT-DX alternating water softening systems JM-DX 1000-2000 D (quantity controlled)
			JUDO JUDOMAT-DX parallel water softening systems JM-DX 1000-2000 P (quantity controlled)
			JUDO JUDOMAT-DX triplex water softening systems JM-DX 1000-2000 T (quantity controlled)

Tab. 2: Models



The JUDO disinfection unit JCLE 5 E is required once for JUDO JUDOMAT-DX single water softening systems JM-DX 1000-2000 E!

The JUDO disinfection unit JCLE 5 E is required twice for JUDO JUDOMAT-DX alternating water softening systems JM-DX 1000-2000 D or JUDO JUDOMAT-DX parallel water softening systems JM-DX 1000-2000 P!

The JUDO disinfection unit JCLE 5 E is required three times for JUDO JUDOMAT-DX triplex water softening systems JM-DX 1000-2000 T!



3.2.1 Scope of supply

JUDO disinfection unit JCLE 2:

- Electrode with assembled connection cable
- Installation and operating instructions

JUDO disinfection unit JCLE 2 D:

- Electronic control unit for wall mounting
- Short-circuit proof, safety isolating transformer with Euro plug for all mounting
- Two off connection adapters with integrated electrode and ready-for-use connecting cable
- Brine pipe $\frac{3}{8}$ ", 1.2 m
- Installation and operating instructions

JUDO disinfection unit JCLE 2 E:

- Electronic control unit for wall mounting
- Short-circuit proof, safety isolating transformer with Euro plug for all mounting
- Connection adapter with integrated electrode and ready-for-use connecting cable
- Brine pipe $\frac{3}{8}$ ", 0.6 m
- Installation and operating instructions

JUDO disinfection unit JCLE 5 E:

- Electronic control unit for wall mounting
- Short-circuit proof, safety isolating transformer with Euro plug for all mounting
- Connection adapter with integrated electrode and ready-for-use connecting cable
- Two off fittings with hose connection gland and hose clip
- Installation and operating instructions



Using your order, check the supplied parts for completeness and sound condition!

The product is supplied fully assembled!

Damage caused by transport must be reported inside 24 hours, otherwise no damage claims can be settled for insurance reasons!

3.3 Technical data

Mechanical, hydraulic data	JCLE	2 D	2 E	5 E
Connection adapter (brine pipe)	["]	$\frac{3}{8}$		-
Hose connection gland (brine pipe)	[mm]			16
Dimensions, control unit (WxHxD)	[mm]	54x110x30		
Dimensions, safety isolating transformer (WxHxD)	[mm]	48x110x40		
Electrical data				
Power supply (via Euro plug)	[VAC]	230		
Frequency	[Hz]	50/60		
Secondary safety isolating transformer	[VAC/VA]	11.5/6.9		
Max. power consumption	[VA]	6		
Degree of protection, control unit		IP 41		
Degree of protection, safety isolating transformer		IP 54		
Protection class, safety isolating transformer		II		

Tab. 3: Technical data



3.4 Application

JUDO disinfection units are used for protection against bacterial infection of the cation exchange resin of JUDO JUDOMAT water softening systems.

3.4.1 Intended use

The JUDO disinfection unit is used for disinfection of the cation exchange resin of JUDO JUDOMAT water softening systems operating according to the NaCl electrolysis process in rooms not at risk of explosion with non-condensing and non-aggressive atmospheres within the context of the usage options named in these installation and operating instructions.

Intended use also includes the reading of these installation and operating instructions, adherence to all the safety conditions and instructions contained within them and the performance of inspection and maintenance work within the course of the inspection and maintenance of the corresponding water softening system.



Attention

Other uses are not compliant with the intended use and not permitted!

JUDO Wasseraufbereitung GmbH will not be responsible for the resulting damage, the operator alone bears the risk!

3.5 Function description

During the regeneration of the water softening system (salting of the cation exchange resin with brine) the electrode registers the increased conductivity in the brine pipe, whereby the cation exchange resin is disinfected by automatic chlorination using the NaCl electrolysis process. If the required quantity of regeneration agent for regeneration of the resin bed is siphoned out of the salt dissolving and storage tank (brine flow at the electrode stops), chlorination is automatically ended. Any excess chlorine is washed away at the end of regeneration.

The electrode polarity changes automatically after each disinfection process.

The chlorine concentration can be adjusted via the potentiometer setting at the relevant water softening system.

In conjunction with positively controlled regeneration of the water softening system, the cation exchange resin is also disinfected during standstill periods.



4 Installation



Attention

For the eventuality that leaking at the JUDO disinfection unit connections or of the brine pipe could result in extensive damage, a sufficiently sized floor drain (in compliance with DIN EN 12056) must be installed at the place of use!

4.1 Requirements for the place of installation

- The JUDO disinfection units JCLE 2 D, 2 E and 5 E must be installed in a dry, frost-proof location with a condensation-free and non-aggressive atmosphere.
- Ensure there is enough space available for maintenance and repair work and also for ready accessibility.
- An electrical connection (constant voltage, site provided socket) must be provided in the immediate vicinity of the JUDO disinfection unit.

4.2 Installation notes



Attention

The device-specific operating data must be adhered to!

Before installation, ensure that the relevant water softening system is hydraulically depressurised!



Observe the separate installation and operating instructions of the corresponding water softening system!



JUDO disinfection unit JCLE 2:

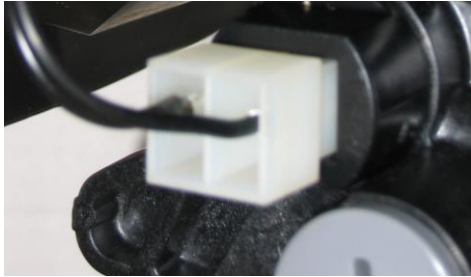


Fig. 1: Connection at the central control valve

Connection socket JCLE 2

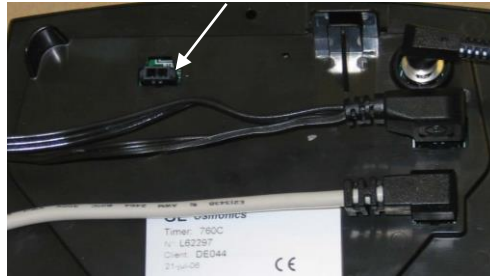


Fig. 2: Connection on the rear side of the control unit

- Fig. 1: Screw out the regenerating agent top-up regulator at the central control valve and remove the ball. Screw the electrode in so it forms a leak-tight seal and plug the white connection plug correctly into the electrode.
- Fig. 2: Insert the two-pole connection plug with the latch pointing upwards in the connection socket on the rear side of the control unit and route the connection cable cleanly into the valve head so that this cannot be trapped by the rotating camshaft and consequently damaged.

JUDO disinfection unit JCLE 2 D, 2 E and 5 E:

- Mount the control unit vertically on its mounting fixture on a smooth wall surface at a distance of no more than 1.5 m from the brine pipe(s) of the relevant water softening system.
- Mount the safety isolating transformer on its mounting fixture on a smooth wall surface at a distance of no more than 0.7 m from the control unit and 1.8 m from the site-provided socket.
- Cut the brine pipe(s) of the corresponding water softening system using hose cutters as recommended.
- JCLE 2 D and 2 E:



Fig. 3: Brine pipe connection

With JUDO JUDOMAT alternating or parallel water softening systems JM 2-3 WZ-D or JM 2-3 WZ-P disconnect the existing connection of the respective brine pipe at the fittings (item 1) and position the connection adapter (Fig. 4) in between as described below. Use the supplied brine pipe as an extension between the connection adapter and the suction lance fitting (item 2).



Fig. 4: Connection adapter

Release the union nuts from the connection adapter. Lead the brine pipes through and insert up to the stop (lock home) in the connection adapter. Refit the union nuts and tighten manually to form a leak-tight seal on the connection adapter.



- JCLE 5 E:
Push the union nuts and hose clips over the hose nozzles. Correctly fit the brine pipes on the hose nozzles and tighten the hose clips so that a seal is formed. Fit hose nozzles with the union nuts and tighten manually to form a leak-tight seal on the connection adapter.

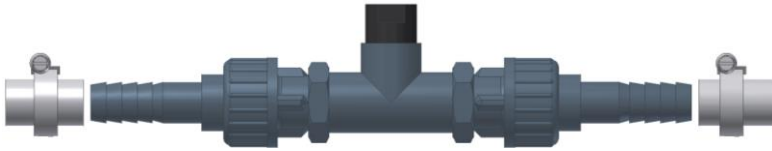


Fig. 5: Connection adapter

- In doing so ensure that the brine pipes are free from mechanical stresses and also free from kinks or loops.
- Observe technical information, local installation regulations and general guidelines (e.g. EVU, VDE, WVU, DIN, DVGW, ÖVGW, SVGW).

Problem solutions and other installation options can be clarified by a JUDO technical consultation.

4.2.1 Connections and device components

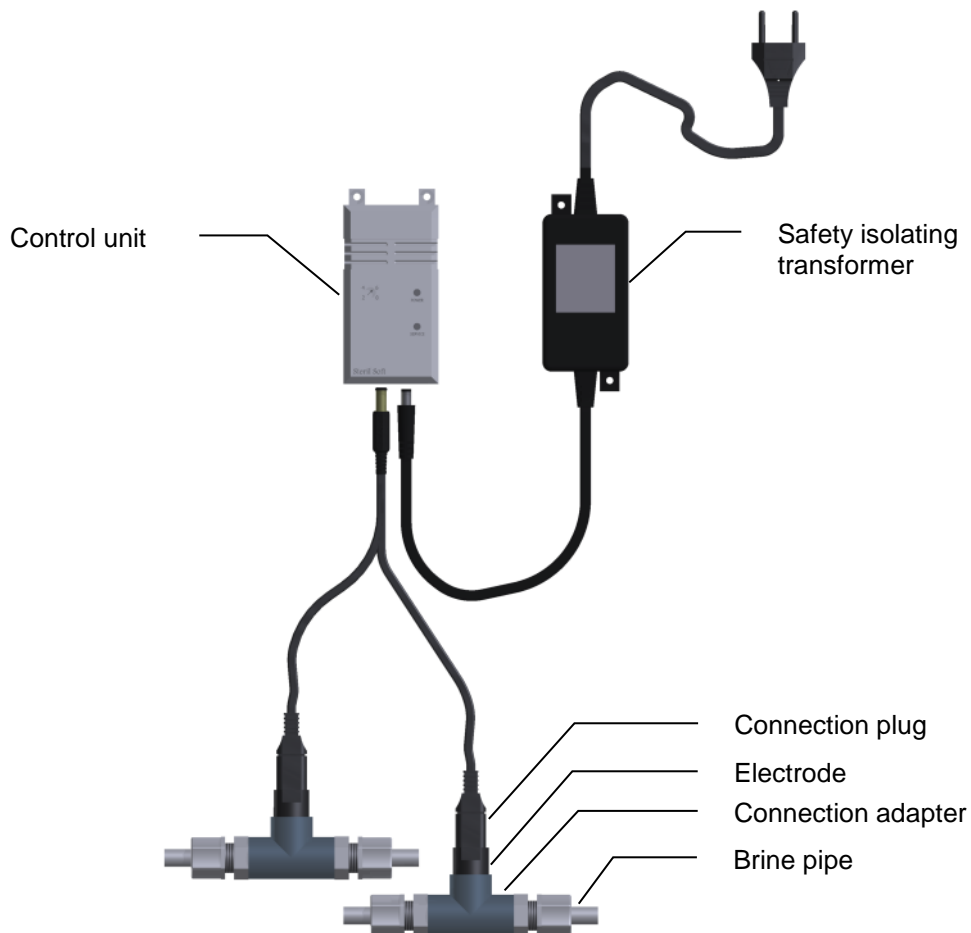


Fig. 6: Connections and device components (here JCLE 2 D)



4.2.2 Installation example

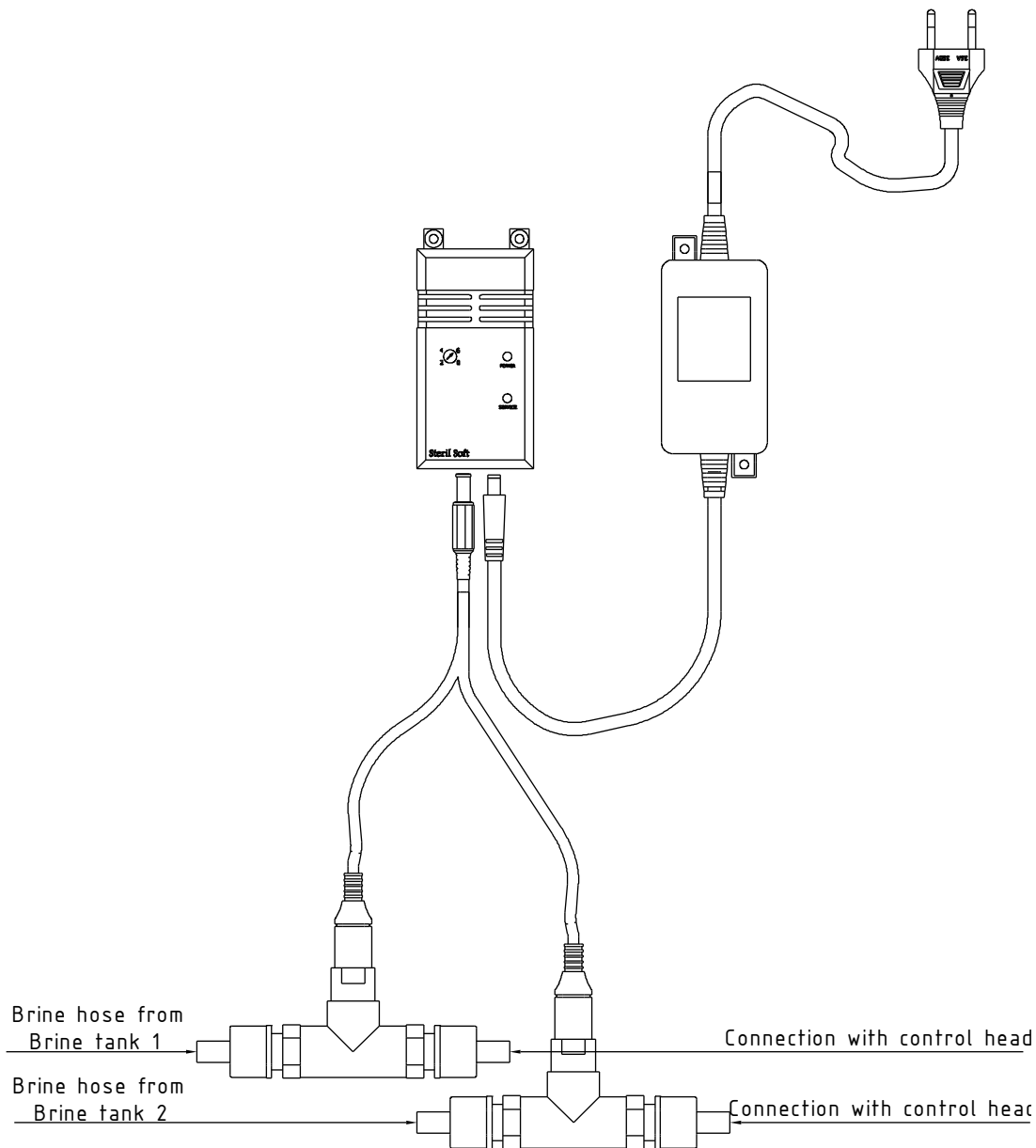


Fig. 7: Installation example (here JCLE 2 D)



4.3 Electrical connection



Attention

Before connection check whether the mains voltage of the safety isolating transformer of the JUDO disinfection unit JCLE 2 D, 2 E or 5 E matches the local voltage!
Make proper connections at the control unit and the electrode(s)!



The JUDO disinfection unit JCLE 2 is supplied with voltage from the control unit of the respective water softening system!

5 Description of the control unit

5.1 Display and control elements

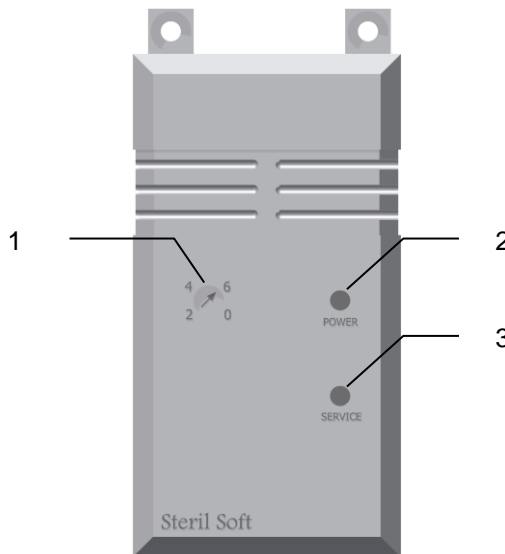


Fig. 8: Display and control elements

Item	Element	Function
1	Potentiometer	Adjustment of the chlorine concentration (see Chap. 6.1.1)
2	Power LED (green)	Illuminates if the control unit is supplied with power and operational
3	Service LED (red)	Illuminates during operation (chlorination during salting)

Tab. 4: Display and control elements



For measurement reasons it is possible that the red service LED also illuminates if no chlorination is taking place (this is not a fault)!



6 Commissioning



Attention

Prerequisite for commissioning is the correct installation of the JUDO disinfection unit!



The commissioning must only be performed by JUDO customer service or authorised technical personnel!

The transfer confirmation (see Chap. 7.3) must be carefully filled out upon commissioning!

Observe the separate installation and operating instructions of the corresponding water softening system!

6.1 Initial or recommissioning

During initial or recommissioning, it must be ensured that

- no visible damage is present on the JUDO disinfection unit or its device components,
- all connections are checked for leak-tightness.

6.1.1 Chlorine concentration setting



Make the adjustment at the potentiometer with a suitable screwdriver!

The settings specified here are intended solely as guide values dependent on the resin quantity of the water softening system concerned!

For a hardness level $\geq 30^\circ$ dH, setting 4 - 6 is generally recommended!

9.5	For system type
0	JUDO JUDOMAT alternating water softening systems JM 2-3 WZ-D (quantity controlled)
	JUDO JUDOMAT alternating water softening systems JM 2-3 D (quantity controlled)
	JUDO JUDOMAT parallel water softening systems JM 2-3 WZ-P (quantity controlled)
2	JUDO JUDOMAT single water softening system JM 4 Z-E (time controlled)
	JUDO JUDOMAT single water softening system JM 4 WZ-E (quantity controlled)
	JUDO JUDOMAT alternating water softening system JM 4 D (quantity controlled)
	JUDO JUDOMAT parallel water softening system JM 4 WZ-P (quantity controlled)
4	JUDO JUDOMAT single water softening system JM 6 WZ-E (quantity controlled)
	JUDO JUDOMAT alternating water softening systems JM 6-10 D (quantity controlled)
	JUDO JUDOMAT parallel water softening system JM 6 WZ-P (quantity controlled)
	JUDO JUDOMAT-DX single water softening systems JM 1000-1500 E (quantity controlled)
	JUDO JUDOMAT-DX alternating water softening systems JM 1000-1500 D (quantity controlled)
	JUDO JUDOMAT-DX parallel water softening systems JM 1000-1500 P (quantity controlled)
6	JUDO JUDOMAT-DX triplex water softening systems JM 1000-1500 T (quantity controlled)
	JUDO JUDOMAT-DX single water softening system JM 2000 E (quantity controlled)
	JUDO JUDOMAT-DX alternating water softening system JM 2000 D (quantity controlled)
	JUDO JUDOMAT-DX parallel water softening system JM 2000 P (quantity controlled)
	JUDO JUDOMAT-DX triplex water softening system JM 2000 T (quantity controlled)

Tab. 5: Chlorine concentration setting



6.2 Faults

Fault	Cause	Remedy
Control unit not working	Mains plug not plugged in	Plug in mains plug
	Power failure	Check site provided pre-fuse
	Control unit or safety isolating transformer defective	Check control unit or safety isolating transformer and replace as necessary
Disinfection not functioning correctly	Lack of regenerating salt or too low brine quantity/concentration	Top-up regenerating salt, after brine formation regenerate water softening system
	Chlorine concentration setting too low	Check setting, adjust as necessary
	Electrode dirty or defective	Check electrode, clean or replace as necessary
	Brine pipe clogged	Check brine pipe, clean or replace as necessary

Tab. 6: Faults

If a fault cannot be rectified based on the information in Table 6, contact your JUDO customer service representative or an authorised specialist company.

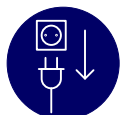
JUDO Wasseraufbereitung GmbH
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 +41 (0)61-90640-50
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 www.judo-online.ch

Installation company:

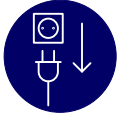
6.3 Shutting down



Switch the power supply of the JUDO disinfection unit off if the corresponding water softening system is out of service or shut down!



7 Inspection, maintenance, service



Switch off the power supply before working on system components!



Servicing and maintenance could only be performed by JUDO customer service or authorised technical personnel and while adhering to the applicable safety conditions! Orderly and systematically performed servicing is the underlying requirement for a fault-free long service life of the JUDO disinfection unit (adhere to DIN EN 806-5:2012)!

According to DIN EN 806-5:2012, every technical plant requires regular servicing and inspection. The inspection should be performed at intervals of 2 months by trained personnel and servicing at half-yearly intervals within the scope of the associated water softening system servicing. Both must always be performed by JUDO customer service or an authorised specialist company, who will if necessary replace defective parts or wear parts. We recommend that you set up a customer service contract, so that your JUDO disinfection unit can be regularly tested for fault free operation.

7.1 Cleaning

Check the electrode at regular intervals and clean as necessary, e.g. to remove deposits.

7.2 Spare parts

Designation	Order no.
Control unit with safety isolating transformer	1510108
Connection adapter with electrode	1980604
Brine pipe $\frac{3}{8}$ " *	1610484

Tab. 7: Spare parts

* Please specify the length required for the order in metres

7.3 Transfer confirmation and maintenance log



**The attached transfer confirmation must be carefully filled out upon commissioning!
The attached maintenance log must be carefully filled out during maintenance work and serves as a template for the creation and orderly keeping of an on-going maintenance book!**

