

Installation and Operating Instructions

JUDO Sample water cooler JPK 3

Sample water cooler

Valid for: EU countries and Switzerland

Language: English

Attention:

Carefully read through the installation and operating instructions and safety information before installing and putting the unit into service.

These must always be issued to the owner/user.

**Prolongated guarantee period
if a maintenance contract has
been concluded!**

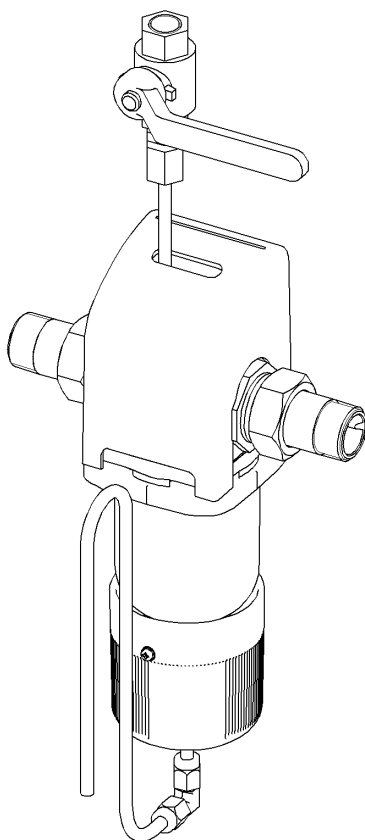


Fig.: JPK 3



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Dear Customer,

We would like to thank you for your confidence in us, which you have shown by purchasing this device. The product you have purchased is a sample water cooler developed using state of the art technology.

These sample water coolers are suited for water sampling temperatures up to maximum 100 °C (212 °F).

This sample water cooler serves the purpose of removing hot water samples concerning the feed water, the boiler water and the condensate.

Each unit is thoroughly checked before delivery. Should difficulties nevertheless occur, please contact the responsible customer service. See back page.

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Enclosure: Consultation Voucher

1. Concerning these Operation Instructions



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

The operation instructions have to be always on-hand on the place of action of the sample water cooler.

These operation instructions shall make it easier, to become acquainted with the sample water cooler and to profit from its intended field of application.

The operation instructions contain important indications, in order to operate the sample water cooler in a safe, appropriate and economic way.

They contain essential indications, that have to be observed concerning its installation, its operation as well as its maintenance. The observance of these indications helps avoid dangers, reduce repair costs and increase the durability of the sample water cooler.

These operation instructions have to be read and to be applied by each person being charged with the carrying out of operations on the sample water cooler,

For example:

- **Installation**
- **Operation**
- **Servicing** (maintenance, inspection and overhaul)

The installation and the servicing may only be effected by trained personal, authorized by the manufacturer, being in a position to fulfill the directives, and the country-specific prescriptions, stated in the Installation- and Operation Instructions.

In addition to the Operation Instructions and the binding regulations concerning the accident-prevention, valid in the country of the user and at the place of the mounting, the

field-specific and security-accordant accepted rules for professional working have to be also taken into consideration.


These operation instructions have therefore to be read obligatorily by the assemblyman, as well as by the responsible trained personal / the operating person before the installation, the putting into operation and the servicing.


Not only the general security advices included in the chapter "Intended Use" have to be observed, but also the specific security advices integrated under the other gists.

1.1 Used Symbols

The security advices contained in theses operation instructions are marked by the following symbols:

 **ATTENTION**  Indication to existent dangers

 Warning, electrical voltage.

 Application tips and other information's.

Indications directly affixed to the sample water cooler, as for example:

- Flow direction (see fig.1)
- Type plate
- Cleaning tips

have to be paid attention to imperatively, and have to be kept in a completely legible state.

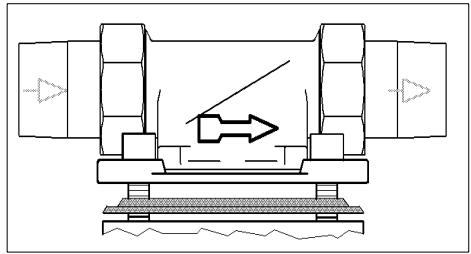


Fig. 1: Built-in rotary flange

1.2 Security Advices and Dangers in Case of Non-compliance

In detail the non-compliance of the general danger symbols can bring about the following endangerments:

- Failure of important functions of the sample water cooler.
- Imperilment of persons caused by electrical and mechanic influence.
- Imperilment of persons and environment, caused through leakage.

Each kind of a security dangerous mode of operation has to be avoided.

The non-observance of these operating instructions and their safety advices can implicate a peril concerning the environment and the sample water cooler.

1.3 Used Units

At variance with International System of Units [SI= System International, the following units have been applied:

Unit	Conversion
°F	°F = 9/5°C + 32
bar	1 bar = 10 ⁵ Pa = 0,1 N/mm ²
¾"	DN 20
°e	°e = 0.142 mmol/l alkaline earth ions

2. Intended Use

The installation and application of the sample water cooler are subject to such national provisions as are in force.

Besides the operation instructions, the binding regulations being in force in the users country and at the place of the mounting concerning the accident-prevention the accepted rules for security-accordant and field-specific working have to be also observed.

The sample water cooler is appropriate for the use in heating circuits up to a water temperature of the heat water of maximum 100°C (212°F).

It has been manufactured according to the state-of-the-art and the recognized safety-related rules, valid in Germany.

The sample water cooler may exclusively be used as described in the operation instructions. Another utilization or any utilization going beyond these ones is to be considered as non-appropriate.

There are additional dangers when not being used as intended, and if the danger symbols

and the security advices are not observed.

For damages resulting from this, the manufacturer / supplier are not liable. The risk takes the user himself.

To the intended use belongs also the observance of the operation instructions.

Before using the sample water cooler beyond the utilization limits stated in the operation manual the manufacturer / supplier have by all means to be contacted.

The sample water coolers are only to be used in impeccable condition as well as intended, safety-conscious and danger-conscious with respect to the operation manual.

Have function faults to be eliminated without any delay.

For protection against scalds and burns at first the cooling? water and then the hot water have to be turned on.

For the prevention of burns the skin contact has to be avoided.

2.1 Indication of Special Dangers

2.1.1 Electric Apparatus / Installations



Any electric mains and devices mustn't be in immediate proximity to the sample water cooler!

Electric apparatus / installations not being splashing water protected and that are near to the sample water cooler, can be damaged through water that escapes during the back-washing or in case of in-appropriate use.

If the electric devices / installations are connected to the power supply, a short-circuit can be caused. In this case persons are in danger to get an electric shock. Electric devices / installations being close by here have therefore to be splashing water protected respectively they have to be in accordance with the statutory prescriptions for wet rooms.

3. Product indications

3.1 Purpose

The sample water cooler is suited for the use in heating circuits up to a heat water temperature of maximum 100° C (212°F).

The sample water cooler serves the purpose of removing hot water samples concerning the feed water, the boiler water and the condensate.

4. Installation

4.1 General



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

The installation may only be effected by trained personal.

The chapter “Intended Use” has obligatorily be observed!

The pipe line has to be able to carry the sample water cooler safely.

If not a mechanic damage to the pipe line can occur right up to a breakage. Water damages can result from this. Persons close to the sample water cooler are exposed to a health hazard.

The pipe lines have therefore to be additionally fixated respectively supported.

For an easy operation and maintenance the indicated distances have to be imperatively observed (see chapter “Installation Dimensions JPK 3”).

Above and below the sample water cooler the free space should not be less than 250mm. These distances are necessary in order to be in a position to effectuate and easy operation and maintenance in a proper way.

For the shut-off of the cooling water a separate cooling water intake valve [on site] is required. It has to be mounted before the sample water cooler.

For maintenance purposes the sampling conduit before the sample water ball cock should be capable of being shut-off by means of a valve – on site.

The sample water cooler have to be pressure free if the valve is being closed!.

4.1.1 Transport / Stocking

Transport:

The device has to be transported carefully!

Stocking:

Dry, frost-resistant storage location

Permitted storage temperature:

0°C up to 40° C (32°F up to 104°F)



Indication

Other uses are considered as not intended, and are not permitted.

The JUDO Water Treatment Company won't be liable for any consequential damages.

4.1.2 Requirements concerning the Mounting Place

The installation room has to be dry and frost resistant! Unauthorized persons mustn't have access to the sample cooler!

4.1.3 The Build-in Position



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

Install the sample water cooler always in vertical position ($\pm 5^\circ$)!

4.1.4 Mounting of the Built-in rotary flange

The mounting is effected by means of the integrated built-in rotary flange and the here-with supplied screw connections [swivel nut, grommet and flat seal]. The built-in rotary flange serves as an element connecting to the cold water system.

The built-in rotary flange has to be mounted in flow direction. This one is marked by a cast in arrow under the casing (see fig.1).



(see chapter "Security Advices and Dangers in Case of Non-compliance")

The flange surface of the built-in rotary flange has to be positioned horizontally.

The built-in rotary flange has to be mounted so that any mechanic tensions will occur.

Unless a mechanic damage right up to the break of the pipe line or the built-in rotary flange can be caused. Considerable water damages can be the consequential effect.

Persons that stay near to the sample water cooler are exposed, in that case, to a sanitary risk, due to hot water.

At installation, it has therefore to be paid attention to the fact that any strong forces act upon the pipe line, the built-in rotary flange and the sample water cooler.

4.1.5 Connection to the Heating Circuit

The connection to the heating circuit is effected by means of a ball cock with BSP G 1/4" female thread. For the mounting / dis-assembly of the sample water cooler and for the cleaning of the sieve a shut-off possibility should be inserted before the sample water ball cock.

On mounting it has to be observed, that the retention sieve with the sieve cloth pointing upward is located on the entry side of the sample water ball cock.

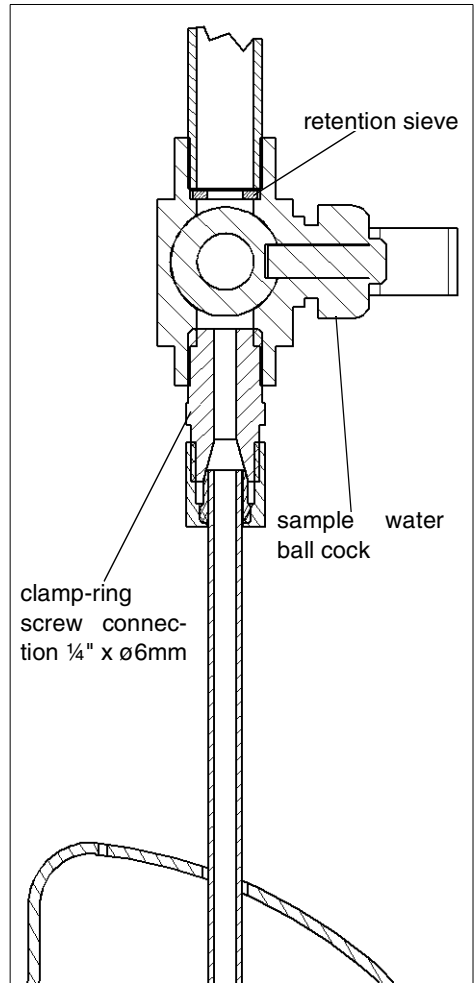


Fig. 2: Connection to the Heating Circuit

5. Operation



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

The chapter “Intended Use” has obligatorily be observed!

5.1 Putting into Operation

Before the putting into operation [initial commissioning] or the putting into operation after maintenance works the sample water cooler has to be **filled** with water!

- open the cooling water inlet valve.
- the enclosed air will be flushed through the sample water cooler and removed after the cooling water inlet valve having been opened.
- after having been ventilated the sample water cooler is ready for service.

5.2 Description of the Functioning

The periodic control of the water qualities concerning the feed water, the boiler water

and the condensate ranks among the most important tasks in the boiler house. It often happens that no water analysis is effected, due to a lack of appropriate removal installations.

The removal of hot water samples is not only dangerous but leads inevitably to imprecise and false analysis results.

Therefore the measurement of the content of oxygen binder is not possible, due to the fact that in the case of high temperature immediately a reaction with atmospheric oxygen takes place. Concerning boiler waters the evaporation loss has to be taken into consideration, when calculating the results.

A correct result of the water examination can only be achieved, if a sampling device is available, that corresponds to the operating conditions. The analysis of the water samples takes place, in general, at a referring temperature of 20°C (68 °F).

This induces the having to be cooled-down of the water samples exceeding this temperature.

In doing so the measuring good is led into a stainless steel heat exchanger via the sample water ball cock and cooled down by the cooling water flowing counter-current.

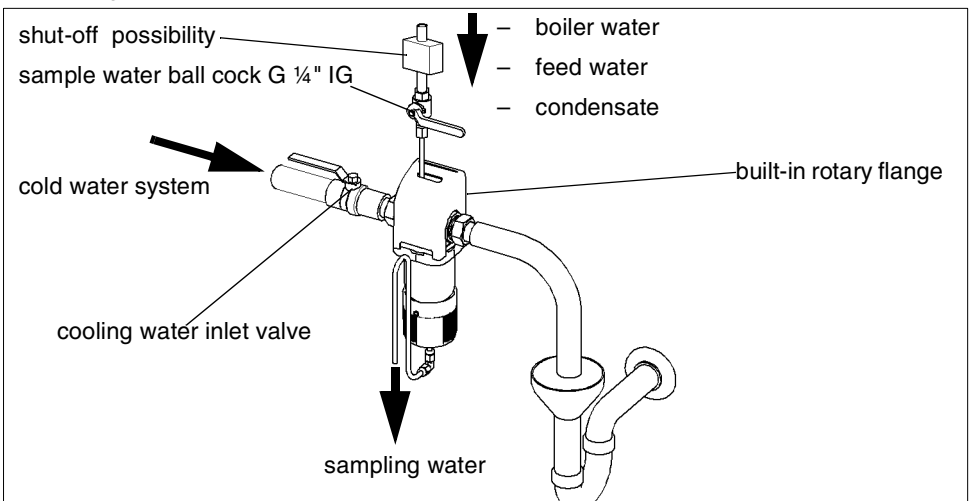


Fig. 3: Description of the Functioning

5.3 Take a sample

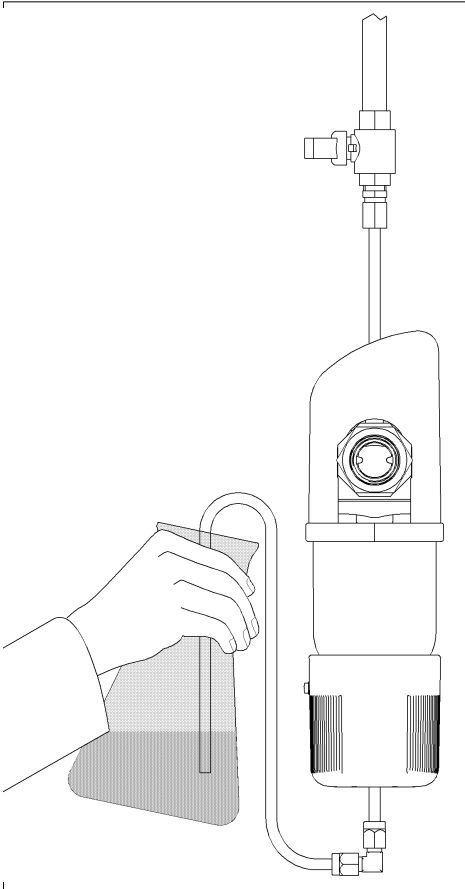


Fig. 4: Take a sample



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

Danger of Scald!

Course of Action concerning the sampling removal:

- 1 open cooling water inlet valve (on site) and wait till the flowing out of a strong cooling water jet of the cooler will take place, minimum 1000 l/h (4.4 gpm US / 3.7 gpm UK). the cooling water temperature should lie at about 15°C (59°F).
- 2 Open the sampling water tap carefully (ball cock equipped with red handle, above the device) till a thin jet of the boiler water flows out, about 10 up to 30 l/h (0.05 up to 0.13 gpm US / 0.04 up to 0.12 gpm UK). Flush the Erlenmeyer flask repeatedly in order to effectuate the sampling removal.



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

- **In the case of a too low cooling water stream or a too high sampling water stream there is a danger of scald!**
 - **In the case of non-insulated wires above the sample water cooler there is burn danger!**
- 3 Removal of the sampling water.
By means of escaping splashing water a short-circuit can occur on electric devices.
 - 4 Turn off the sample water tap.
 - 5 Close the cooling water inlet valve.
 - 6 After having brought to an end the sampling analysis the cleaned Erlenmeyer flask can be put on the sampling removal tube in order to store it.



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

Before the sampling removal it has to be obligatorily ensured, that cooling water flows through the device. In the case of non-compliance there is the danger of the destruction of the device and of scald.

5.4 Modifications / Changes / Spares



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

Only original spare parts may be used!

Arbitrary modifications and changes are forbidden due to security reasons!

These ones can compromise the functioning of the sample water cooler and lead to leakiness.

5.4.1 Maintenance / Reparation

Before effecting works on the sample water cooler, that exceed the purely service-related operations, the sample water cooler has to be made pressureless and has to cool-down!

In the case of non-compliance water damages can occur in the building caused by the uncontrolled escaping of water.

The instructions, stated in the chapters “Installation” and “Maintenance” have to be strictly observed.

5.5 Service Interruption



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

In the case that a sample water cooler has to be flanged off or screwed off, the chapter “Intended Use” has to be imperatively observed!

- The flange surfaces have to be protected against damages. Damaged flange surfaces cannot any longer close tightly. Damages on the building and equipment
- can result from this by means of escaping water.
- Store the sample water cooler frost-free! By means of frost, water being enclosed in cavities of the sample water cooler can freeze, due to that the sample water cooler can be damaged mechanically in a way, that it will become leaky in the case of applied operation pressure, or even burst. Caused by escaping water considerable material-damages can occur on the building. Moreover, persons being close to the sample water cooler can be hurt by flaking filter parts.
- In the case of the re-commissioning of the sample water cooler it has to be proceeded as in the case of new sample water cooler (see chapter “Putting into Operation”).

6. Faults

The opening of the devices and the replacement of parts being water pressure-charged may only be effected by licensed personal to ensure the devices – security and tightness.

Help with faults:

Fault	Cause	Removal
There is no or only a weak flow-through of the sampling water.	For the protection against the blocking of the heat exchanger a retention sieve , mesh size 1.0 is inserted on the entry side of the sample water ball cock G ¼". Larger particles can accumulate there and have to be removed.	Inform the installer or the customer service.
The sampling water temperature is too high.	The cooling water temperature exceeds 15° C (59 °F) or the sampling water flow-through is too high.	Let the cooling water run till the temperature drops Reduce the sampling water (< 30 l/h).

7. Maintenance



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

The chapter “Intended Use” has obligatorily to be observed!

7.1 Cleaning



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

Use only clear, drinking water concerning the cleaning of the housing and the transparent filter hood.

Domestic all-purpose cleaners and glass cleaners can contain up to 25% solvents or alcohol (spiritus).

These substances can chemically attack the plastic parts, which can lead to brittleness right up to [brittle] fractures.

These kinds of cleaners must therefore not be used.

7.2 Indicating plate



(see chapter “Security Advices and Dangers in Case of Non-compliance”)

The following indicating plate has to be fixed in the immediate proximity of the sample water cooler:



Caution: Scalding Hazard!

Before the removal of the heating water open obligatorily the cooling water inlet valve till the flowing out of a strong jet.

After that open the sample water ball cock slowly, remove the water sample with a weak jet.

8. Warranty and Services

In order to preserve your guarantee claim it is required, according to DIN 1988, part 8 that a regular inspection, and maintenance takes place, at the latest, however, every 12 months.

To achieve the procedure success also after the putting into service for many years, a regular maintenance of the device is indispensable. Concerning the field of the domestic water technique this is regulated by means of the DIN 1988, part 8.

A maintenance contract ensures at best a good operation function, even concerning the time beyond the guarantee period.

It is to be recommended to aim at the maintenance works and the supply of the consumer- and wear parts being effected by the skilled handicraft or the manufacturer client service.

In the sense of our General Sales and Delivery Conditions the guarantee will only be accepted, if:

- the device has been used in accordance with the explanations, stated in these operation and service instructions.
- the device has not been opened or been treated in any other way inappropriately
- repairs have only be effected by trained personal
- in the case of repairs only original spare parts are used.

9. Data Sheet

9.1 Type

Sample water cooler

Abbreviated name: JPK 3

9.2 Models

Model	Order-Number
JPK 3	8460050

9.3 Technical Data

- The sample water cooler is suited for the use in heating circuits up to a heat water temperature of maximum 100°C (212 °F).
- Water pressure maximum of 3 bar.
- For the easy operating and maintenance sufficient space has to be provided.
- DIN 1988 and DIN 19635 have to be observed.
- Technical specifications, local installation descriptions and general guidelines (z.B WVU, DIN, DVGW, ÖVGW, SVGW) have to be taken into consideration.
- The recipient is made of plastic, equipped with connections for the cooling water inlet BSP R ¾" and –outlet as well as for the sample water inlet BSP R ¼" sample water outlet ¼", heat exchanger made of stainless steel 1.4301 as well as shut-off- and regulation organs.

Nominal Pressure

Model	Operating Pressure	Nominal Pressure
JPK 3	max. 3 bar	PN 10 ¹

1. At a maximum water temperature of 30°C (86°F).

Weight

Model	Weight
JPK 3	2.0 kg

9.4 Installation Dimensions JPK 3

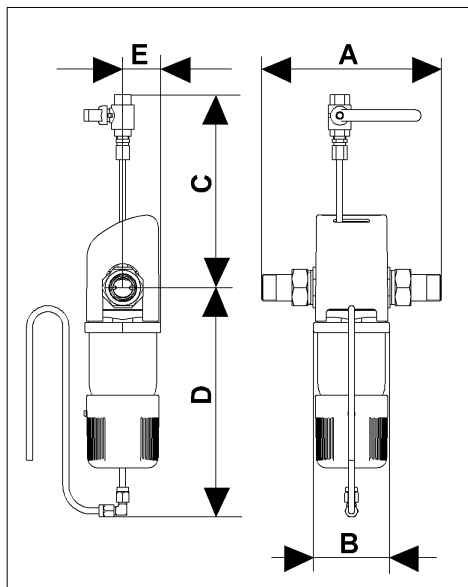


Fig. 5: Installation Dimensions JPK 3

Model	A	B	C	D	E
JPK 3	180	76	190	230	40

Alle Maße in [mm] (see fig.5)

A = Installation Length

B = Device Width

C = Height above the centre of the pipe

D = Height below the centre of the pipe

E = Depth to the centre of the pipe

9.5 Scope of Supply

- Recipient made of plastic equipped with high-quality brass built-in rotary flange with connections for the for the cooling water inlet and –outlet R ¾" as well as

sample water inlet- (G ¼") and –outlet (NW 6).

- Erlenmeyer flask wide-neck 300 ml
- Installation- and Operation Instructions

**Information**

The sample water cooler is pre-mounted!

The operating material is not included in the scope of supply.

Check, please the supplied scope concerning the completeness and intactness of the parts, in concern with the order.

The transport and the despatch is effectuated in complete state.

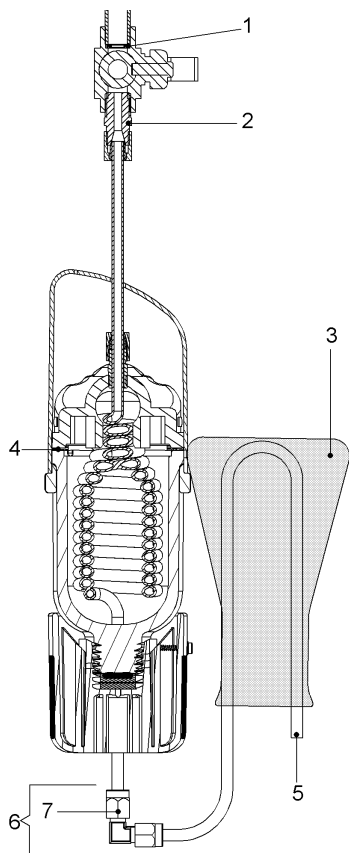
Tranport damages have to be reported within twenty-four hours, due to the fact, that unless, for actuarial reasons any adjustment of claims can be effected.

9.6 Accessories

Measuring instrument		Order-number
Sulphite	Concentration range 0 - 20 mg SO ₃ /l	8742134
	Refill package	8742135
Phosphate	Concentration range 0 - 10 mg P ₂ O ₅ /l	8742136
	Refill package	8742137
JTH-ML	Test sticks for the testing of the concentration of the JUDO long-term conditioner, type, Typ JTH-L and JKL 40 Package content: 100 pieces	8742170
Oxygen	Concentration range 0 - 10 mg O ₂	8742172
Total Hardness Typ A	Measure range 0 - 30 °dH	8742119
	Refill package: Titration solution Typ A	8742121
	Refill package: Indicator	8742122
Total Hardness Typ B	Measure range 0 - 2 °dH	8690013
	Refill package: Titration solution Typ B	8690014
	Refill package: Indicator	8742122

Measuring instrument		Order-number
pH-Value (drinking water / industrial water)	pH 6.5 - 10.0	8742130
p- and m-value	Refill package: Titration solution Typ C	8742125
	Refill package: Indicator C	8742126
	Refill package: Indicator P	8742127
pH-Value 7,5 - 14	Range 7.5 - 14	8742132
pH-pocket tester		8690001
Buffer solution		8721098

10. Spare Parts



Item	Designation	Piece	Order No.	VE ¹ / Piece
1	Retention Sieve	1	2460023	4
2	Clamp-ring screw connection	1	1450255	7
3	Erlenmeyer flask, wide-neck 300 ml	1	1980009	17
4	Profile flange seal	1	2460016	2
5	sample tube	1	1410149	26
6	Angle screwing	1	1450258	22
7	Clamp ring (single-piece for angle screwing)	1	1450259	3

Extended warranty period if a maintenance agreement is concluded!

1. VE = Unit of Billing

11. Customer Service



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Installed by:

<p>JUDO HEIFI-SOFT Mobile softener bottle for the heating (also suited for fixed installation). Soft water in accordance with the requirements of the VDI-Guideline 2035.</p>	<p>JUDO Analysis bag Boiler water-check, made easy / wenn in der Überschrift: Made Easy! The test bag contains various colour comparison instruments and indication sticks.</p>	<p>JUDO HEIFI-TOP Heating and rinse filter for the removal of sludge and gas deposits. Ideal in combination with JUDO HEIFI-FÜL.</p>
<p>JUDO FERROCLEAN High performance magnet separator for the withdrawal of iron sludge from the heating- and cooling-installations.</p>	<p>JMHB Mobile heating protection for installations of a demand of 50 kW or greater. For the treatment of fill- and make-up water in accordance with VDI 2035.</p>	<p>JUDO QUICK-DOS The secondly-quick heating protection out of the tin. Cleans and protects - for better function.</p>

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