oventrop

Regumaq X-25

Operating instructions EN

Regumaq X-25
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1. General information

The original operating instructions are written in German.

The operating instructions in other languages have been translated from German.

1.1 Validity of the instructions

These instructions are valid for the fresh water station Regumaq X-25.

1.2 Availability of the instructions

Every person who works with this product must have read and apply these operating instructions and all applicable instructions.

The instructions must be available at the place of use of the product.

▶ Pass on these instructions and all applicable instructions to the operator.

1.3 Type plate

The type plate is attached to the bottom left of the upper shell from the outside.

1.4 Scope of delivery

Check your delivery for transport damage and completeness.

The scope of delivery includes:

- Fresh water station Regumaq X-25
- Fixing material
- Wall bracket
- 4x sealing ring
- Operating instructions

1.5 Contact

Contact address
OVENTROP GmbH & Co. KG
Paul-Oventrop-Straße 1
59939 Olsberg
GERMANY

Technical customer service
Phone: +49 (0) 29 62 82-234

1.6 Declaration of conformity

Oventrop GmbH & Co. KG hereby declares that this product has been manufactured in compliance with the essential requirements and the relevant provisions of the relevant EU directives.

The declaration of conformity is attached.

1.7 Symbols used

	Highlights important information and further additions.
▶	Action required
•	List
1 2	Fixed order. Steps 1 to X.
▷	Result of action

2. Safety-related information

2.1 Intended use

Operational safety is only guaranteed if the product is used as intended.

The station is an electronically controlled product assembly with heat exchanger for use in domestic areas (e.g. rental units in residential, business or commercial areas). The product assembly supplies heated potable water (hot water).

Use the product:

- In technically perfect condition.
- At locations directly connected to the public low-voltage grid.

The passage of media other than heating water in the storage cylinder circuit and potable water in the potable water circuit is not as intended. Direct connection of the fresh water station to the local and/or district heating networks can lead to malfunctions. Parallel operation with other heating system components, such as heating circuit stations etc. is not permitted.

Any further and/or different use is considered unintended use.

Claims of any kind against the manufacturer and/or his authorised representatives for damage resulting from unintended use cannot be recognised.

Intended use also includes correct compliance with these instructions.

2.2 Modifications to the product

Modifications to the product are not permitted. Modifications to the product will invalidate the product guarantee. The manufacturer will not accept liability for damage and breakdowns caused by modifications to the product.

2.3 Explanation of the warnings

Each warning contains the following elements:

Warning symbol **SIGNAL WORD**

Type and source of danger!
Possible consequences if the danger occurs or the warning is ignored.

! Ways to avoid the danger.

Signal words define the severity of the danger posed by a situation.

DANGER

Indicates an imminent danger with high risk. If the situation is not avoided, death or most serious bodily injuries will result.

WARNING

Indicates a possible danger with moderate risk. If the situation is not avoided, death or serious bodily injuries may result.

CAUTION

Indicates a possible danger with lower risk. If the situation is not avoided, minor and reversible bodily injuries will result.

NOTICE

Indicates a situation that can potentially result in damage to property if not avoided.

2.4 Safety instructions

We have developed this product in accordance with current safety requirements.

Observe the following instructions for safe use.

2.4.1 Danger to life due to legionella formation

Ensure the following:

- The temperature of the potable water in the cold water pipeline must not exceed 25 °C.
- The water in the potable water circuit must be completely replaced after 72 hours at the latest.
- When using a circulation pipe, the hot water temperature must be at least 60 °C. The temperature **difference** between the hot water outlet of the heat exchanger and the return of the circulation pipe at the station must not exceed 5 °C.

2.4.2 Danger to life due to electric current

- Make sure that the product can be disconnected from the power supply at any time.
- Do not operate the product if there is visible damage.

Opening the controller

The controller only needs to be opened when using accessory components. Work on the power supply is therefore only necessary when using accessory components.

Work on the power supply may only be carried out by a qualified electrician.

- Disconnect the product from the power supply at all poles and secure it against being switched on again.
- Check that no voltage is present.
- Only mount the product in dry indoor areas.

2.4.3 Danger due to insufficient personnel qualification

- Work on this product may only be carried out by suitably qualified specialist tradespeople.
  Due to their professional training and experience as well as knowledge of the relevant legal regulations, qualified specialist tradespeople are able to carry out work on the described product in a professional manner.

Operator

- The operator must be instructed in the operation by specialist tradespeople.

2.4.4 Risk of scalding due to hot water

Due to setting or defect of the controller, the hot water temperature at the draw-off points can rise up to the heating water temperature in the buffer storage cylinder.

- If there is a risk of scalding in accordance with DIN EN 806 and DIN 1988 due to a high heating water temperature in the buffer storage cylinder, you must install scald protections at all draw-off points..
- If the heating water temperature in the buffer storage cylinder is low, resulting in a low hot water temperature without risk of scalding at the draw-off points, you must instruct the system operator to ensure the low heating water temperature in the buffer storage cylinder all year round.

2.4.5 Risk of injury from pressurised components

- Only carry out work on the storage cylinder circuit or the potable water circuit when the system is depressurised.
- Allow the product to cool down before working on it.
- Wear safety goggles.
- Check that the system is not leaking after work is complete.
- Adhere to the permissible operating pressures during operation.
- Install a non-shut off safety valve in the potable water heating system (DIN EN 806-2).

2.4.6 Risk of burns on hot components and surfaces

- Allow the product to cool down before working on it.
- Wear suitable protective clothing to avoid unprotected contact with hot fittings and system components.

2.4.7 Risk of injury due to the weight of the product

- Always wear safety shoes during installation.

2.4.8 Risk of injury from improper work

Stored energy, angular components, points and corners on and in the product can cause injuries.

- Ensure there is sufficient space before starting work.
- Handle open or sharp-edged components with care.
- Keep the working area tidy and clean to avoid sources of accidents.

2.4.9 Damage to property due to unsuitable location

- Do not install the product in rooms prone to frost.
- Do not install the product in wet or damp environments.
- Do not install the product in rooms with corrosion-enhancing ambient air. Observe the notes on corrosion protection in the appendix.
- Ensure that the product is not exposed to strong sources of electromagnetic radiation.

2.4.10 Risk of damage to property due to incorrect operation

- Do not close the secondary ball valves during operation.

3. Technical description

3.1 Design

3.1.1 Station design

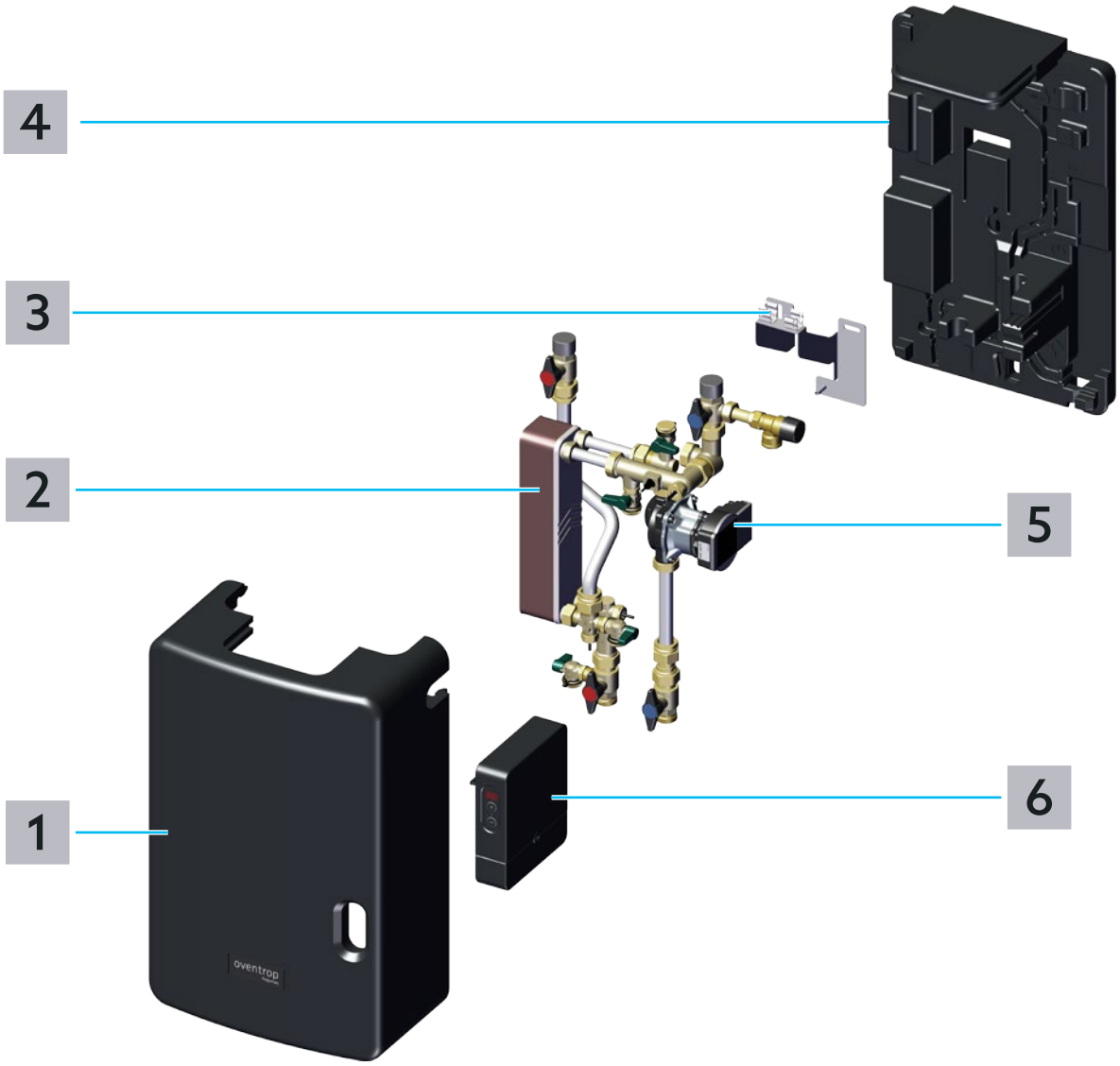

Fig. 1: Station design

1	Upper shell
2	Heat exchanger
3	Wall bracket
4	Lower shell
5	Circulation pump for storage cylinder circuit
6	Controller

3.1.2 Product assembly design

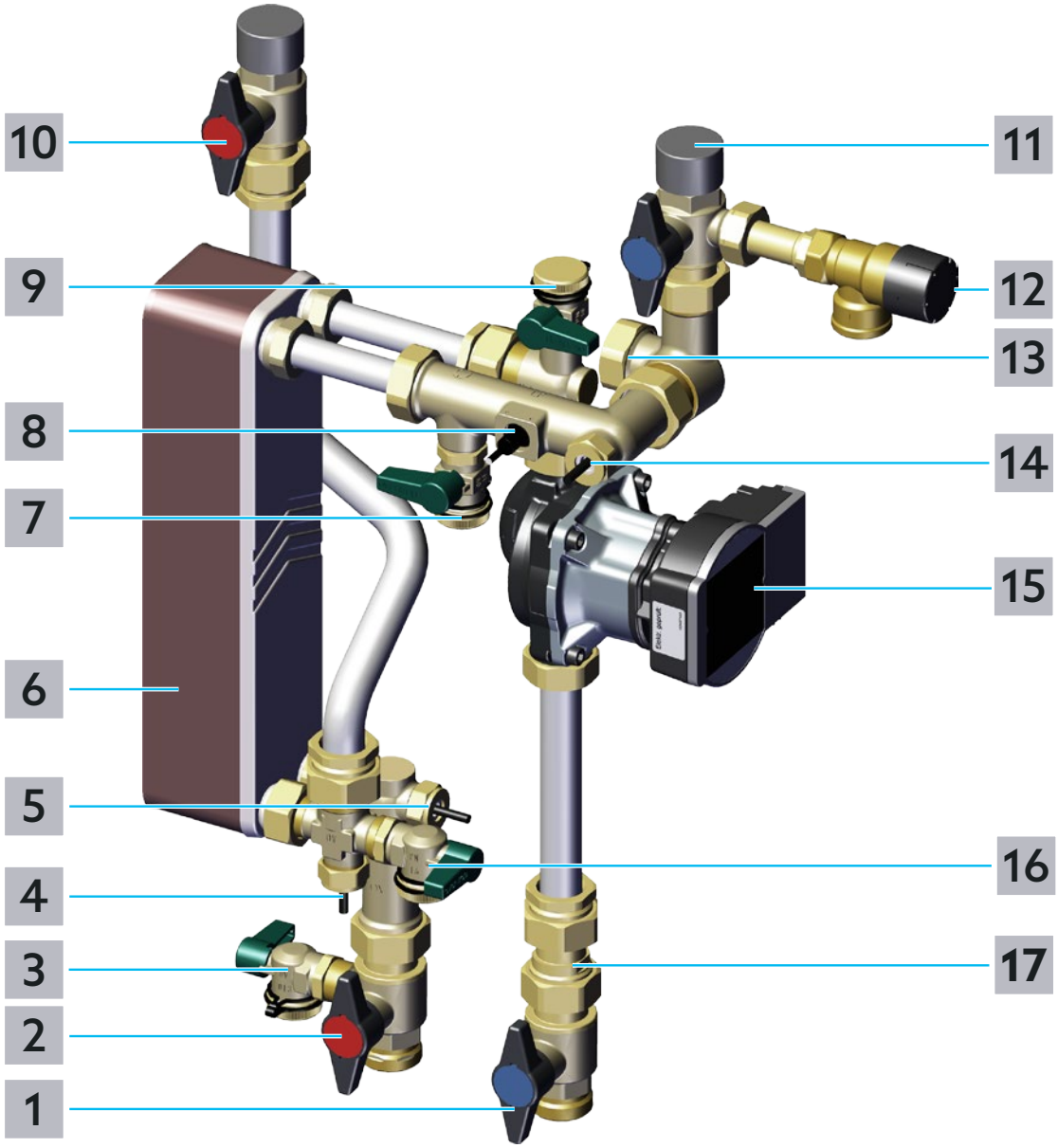

Fig. 2: Product assembly design

1	Shutoff ball valve for storage cylinder circuit return
2	Shutoff ball valve for storage cylinder circuit supply
3	Fill and drain ball valve for storage cylinder circuit supply
4	Temperature sensor for potable water (hot) S2
5	Temperature sensor for storage cylinder circuit S1
6	Heat exchanger
7	Fill and drain ball valve for potable water (cold)
8	Volume flow sensor for potable water circuit
9	Fill and drain ball valve for storage cylinder circuit return
10	Shutoff ball valve for potable water (hot)
11	Shutoff ball valve for potable water (cold)
12	Safety valve for potable water circuit (10 bar)
13	Connection for circulation pipe
14	Temperature sensor for potable water (cold)/ circulation S3
15	Circulation pump for storage cylinder circuit
16	Fill and drain ball valve for potable water (hot)
17	Backflow preventer in the storage cylinder circuit

3.2 Functional description

The Regumaq X-25 is an electronically controlled product assembly with heat exchanger for potable water heating according to the continuous flow principle. The potable water is only heated when it is needed. This station does not require hot potable water to be stored in a storage cylinder. The station enables heat to be provided according to demand, even with very low potable water consumption.

The integrated heat exchanger provides system separation between the potable water circuit and the storage cylinder circuit.

At a specified potable water temperature of 60 °C and a storage cylinder temperature of 75 °C, the discharge of hot potable water can be between1 and 25 l/min. The provision of hot potable water is realised by the controller regulating the circulation pump to a (variable) speed in order to feed heating water from the connected buffer storage cylinder into the heat exchanger according to demand. Based on the actual values for the volume flow and the temperature (of the potable water), recorded by the sensors, the controller calculates the pump speed required to achieve the desired hot potable water temperature.

Example: Simultaneous tapping at several draw-off points and the associated higher consumption of hot potable water immediately triggers a higher pump speed in order to feed more heating water into the heat exchanger. This transfers correspondingly more heat to the potable water circuit.

3.3 Installation schemes

Tichelmann's pipe routing

If you operate several Regumaq X-25 in parallel, pipe the stations according to the Tichelmann's pipe routing in order to realise an even flow through the stations with the lowest possible resistance.

3.3.1 Installation scheme with a storage cylinder and a fresh water station

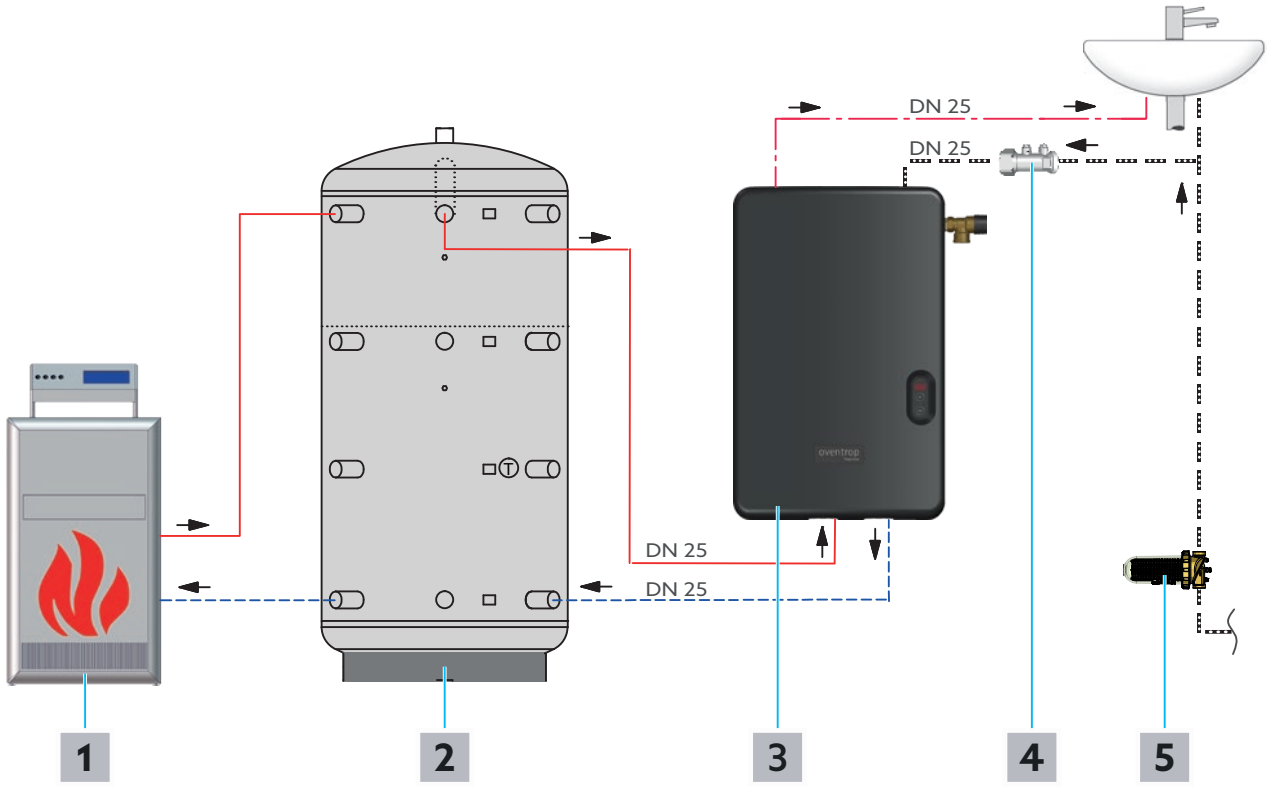

Fig. 3: Installation scheme with a storage cylinder and a fresh water station

3.3.2 Installation scheme with a storage cylinder and two fresh water stations

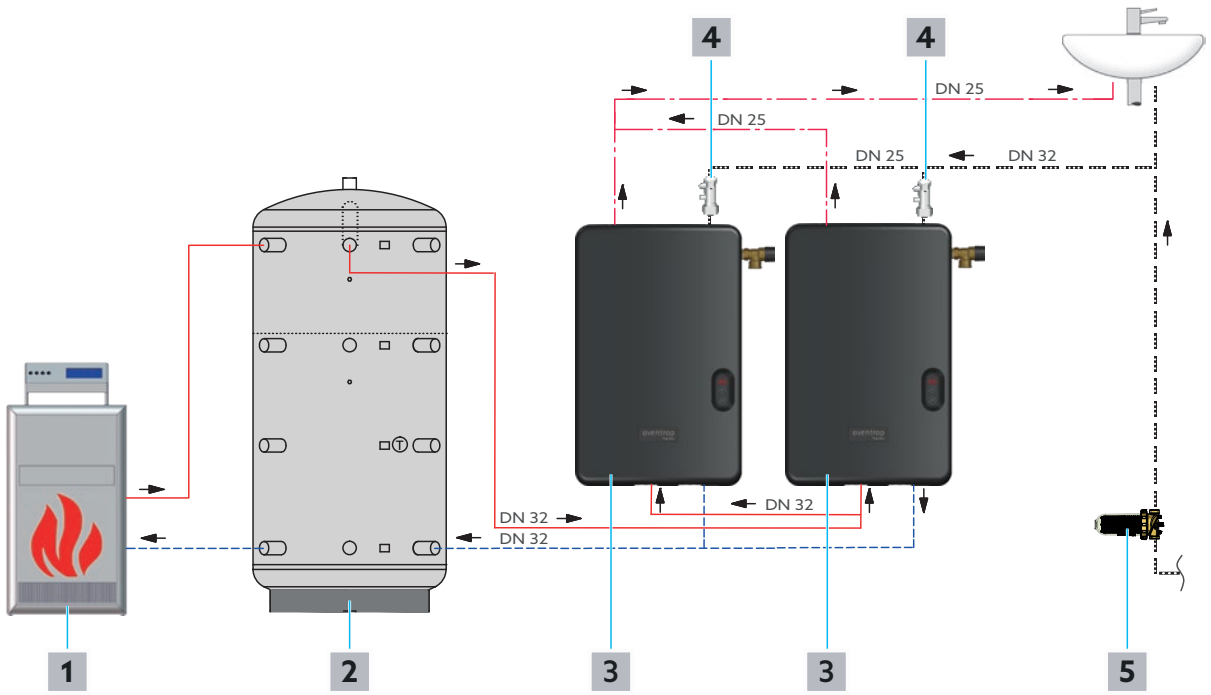

Fig. 4: Installation scheme with a storage cylinder and two fresh water stations

1	Heat generator
2	Buffer storage cylinder
3	Regumaq X-25
4	Backflow preventer
5	Water filter
	Storage cylinder circuit supply
	Storage cylinder circuit return
	Potable water (cold) (PWC)
	Potable water (hot) (PWH)
	Flow direction

3.4 Application example

Design temperatures: 60°C hot water; 75°C flow temperature storage cylinder circuit (design according to DIN 1988-300)

Number of X-25 stations	Residential building	Hospital room	Hotel room	Series shower installation	Buffer storage cylinder volume [l]	Required boiler output [kW]
	1 wash basin 1 kitchen sink 1 shower	**1 wash basin 1 shower**	**1 wash basin 1 shower**	**Number of showers at 6l/min 60 °C PWH (simultaneity factor 80%)**		
1	3	4	3	5	500	17
2	14	19	12	10	800	33

3.5 Technical data

General information	
Max. operating pressure (p_S)	10 bar
Max. operating temperature (t_S)	95°C
Ambient temperature	2 - 35 °C
Empty weight	Approx. 13 kg

Connections	
Storage cylinder circuit, potable water circuit, circulation	G 1 flat sealing external thread
Fill and drain ball valves	G ¾ external thread, for hose fitting

Storage cylinder circuit	
Fluid	Heating water according to VDI 2035/Ö-Norm (Austrian standard) H5195-1, fluid category ≤ 3 according to DIN EN 1717, (see Oventrop information sheet on corrosion protection in the appendix)
k_V value	2.67 m³/h
High-efficiency pump	Wilo PARA 15-130/8-75/ LIN-9 Power consumption in operation 2 - 75 W

NOTICE

Damage to the measuring turbine due to chemical influences!

Water treatment additives in high concentrations can damage the measuring turbine.

! Ensure that the permissible limits for potable water are not exceeded.

Potable water circuit	
Fluid	Potable water (see Oventrop information sheet on corrosion protection in the appendix)
Discharge capacity (at Δ T = 15K)	1-25 l/min
k_V value	1.88 m³/h
Safety valve	10 bar
- Setting range: - Controller presetting:	20 - 75 °C 20 - 60 °C

Material	
Valves and fittings	Brass / dezincification resistant brass
Seals	Fibre material, EPDM
Thermal insulation	Expanded polypropylene
Pipes	Stainless steel 1.4404
Heat exchanger copper brazed	Plates: Stainless steel 1.4401 Connections: Stainless steel 1.4404 Brazing material: Copper
Heat exchanger copper brazed, Sealix® protective layer	Plates: Stainless steel 1.4401 Connections: Stainless steel 1.4404 Brazing material: copper Protective layer: SIO_2based

Dimensions	
Width/Height/Depth	400/625/240 mm
Pipe distance (primary) connections	100 mm
Pipe distance (secondary) connections	250 mm
Centre distance - Wall (primary)	105 mm
Centre distance - Wall (secondary)	65 mm
Distance between sealing surfaces Primary to secondary side	565 mm

Torques	
Union nuts G ¾	45 Nm
Union nuts G 1	45 Nm
Temperature sensor	15 Nm

Controller	
Inputs	3 temperature sensors, 1 Sika volume flow sensor
Outputs	1 solid-state relay and 1 PWM output
Switching capacity	1 (1) A 240 V~ (solid-state relay)
Total switching capacity	1 A 240 V~
Supply	100 – 240 V~ (50 – 60 Hz)
Connection type	X
Mode of operation	Type 1.C.Y

1000083148 10227810 001 02

Rated surge voltage	2.5 kV
Fuse	T4AH250V
Data interface	LIN bus
Casing	Plastic, PC-ABS and PMMA
Display /	2 7-segment displays, 1 control LED
Operation	2 keys
Protection type	IP 21 / DIN EN 60529
Protection class	I
Contamination degree	2
Controller dimensions	183 x 203 x 54 mm

3.5.1 Dimensions in mm

3.5.1.1 With upper shell

Fig. 5: Dimensions Regumaq X-25 with upper shell

3.5.1.2 Lower shell with product assembly

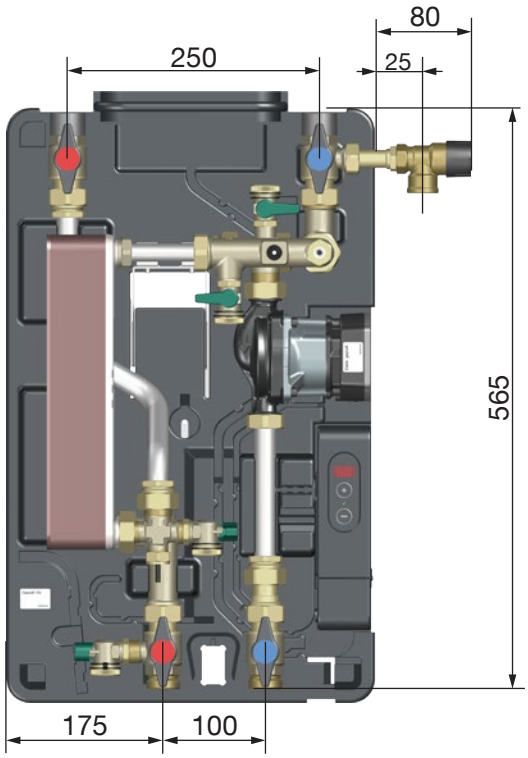

Fig. 6: Dimensions Regumaq X-25 lower shell with product assembly

3.5.1.3 Side view

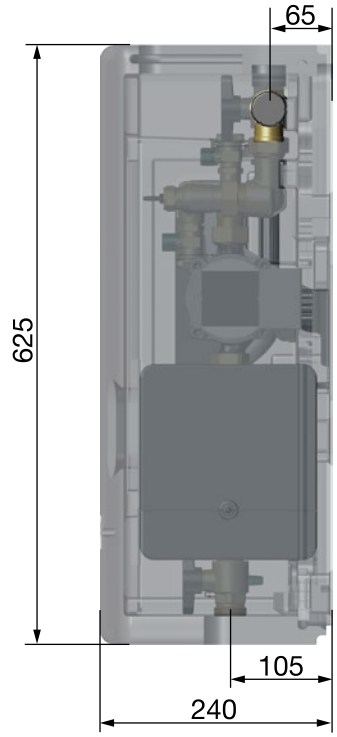

Fig. 7: Dimensions Regumaq X-25 side view

3.5.1.4 Wall bracket

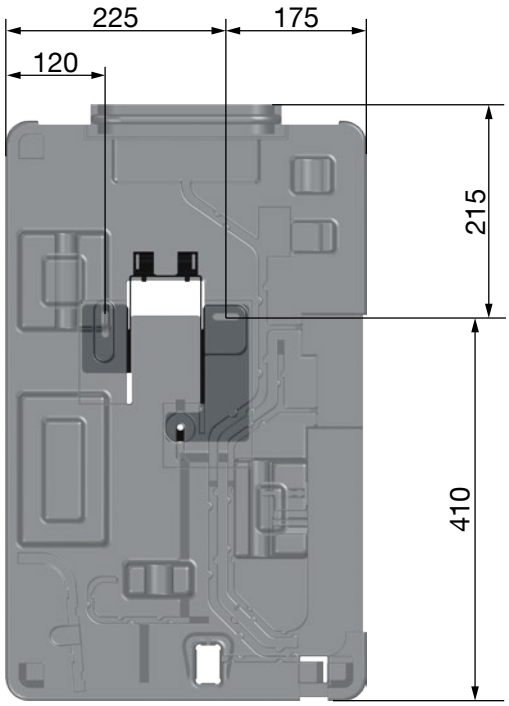

Fig. 8: Dimensions Regumaq X-25 wall bracket

3.6 Terminal assignment of the controller

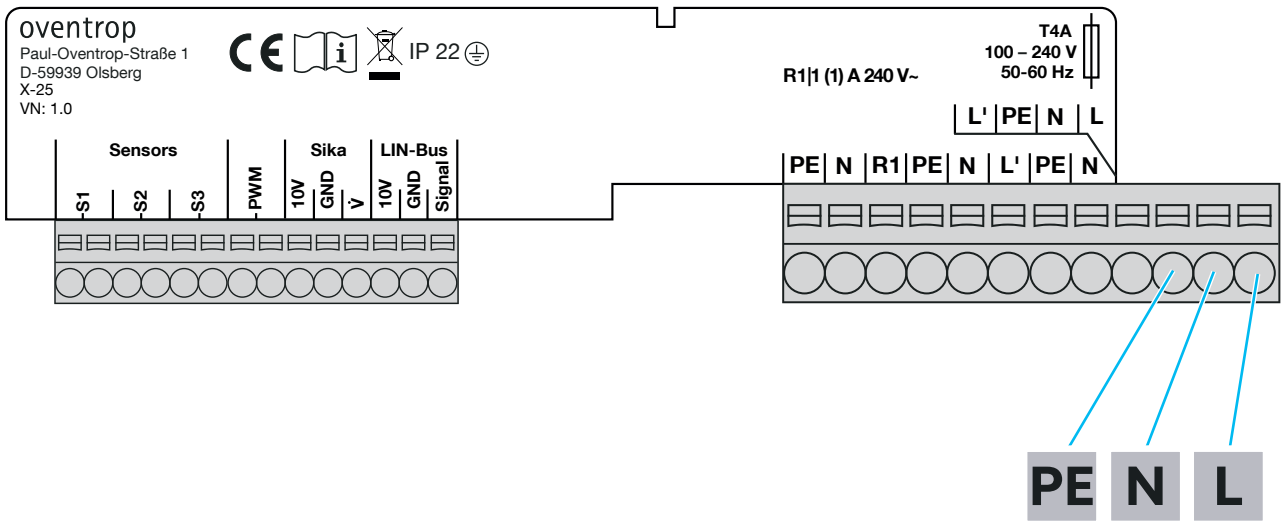

Fig. 9: Terminal assignment

Sensors		
S1	Storage cylinder supply	Connections for temperature sensors **with any polarity** at terminals S1 to S8.
S2	Hot water	
S3	Cold water	
Control outputs for high-efficiency pumps		
PWM	Control outputs for high-efficiency pumps.	
Interface for LIN bus pump		
10 V	Connection of the LIN bus pump to the terminals 10 V, GND and Signal, **observing the prescribed polarity**.	
GND		
Signal		
Volume flow sensor (Sika)		
10 V		Connection for the volume flow sensor via **plug contact.**
V̇	Flow rate	
GND		
Power supply 100 – 240 V~ (50 – 60 Hz)		
PE	Protective conductor ⏚	
N	Neutral conductor	
L	Phase power supply	
R1	Relay 1	
L'	Phase (permanently live, fused contact)	

4. Accessories and spare parts

CAUTION

Risk of injury due to incorrect accessories and spare parts!
Incorrect or faulty accessories and spare parts can cause damage, operational failure and malfunction, creating a risk of injury.

- ! Always use original spare parts from the manufacturer.
- ! If possible, use original accessories from the manufacturer or suitable accessories.

You will find the current accessories and spare part list on our website.

1 Go to the website **www.oventrop.com**.

2 Open the search by clicking on the magnifying glass symbol .

3 Enter the item no. of your product into the search field.

4 Confirm the entry with "Enter" or by clicking on the magnifying glas .

5 Select your product.

▷ On the overview page that opens, you will find various information about your product.

5. Transport and storage

Temperature range	0 °C to +40 °C
Relative air humidity	Max. 95 %
Particles	Store in a dry and dust-protected place
Mechanical influences	Protected from mechanical shock
Weather influences	Do not store outdoors
	Protected from UV rays and direct sunlight
Chemical influences	Do not store together with aggressive media

6. Mounting

6.1 Notes on mounting

The fresh water station should not be considered in isolation, but always in interaction with other components of the heating system.

- ▶ Match the design of the buffer storage cylinder and the heat generator to the performance characteristics of the fresh water station and the specific consumption behaviour in the property.
- ▶ When designing the heat generator, also consider the energy consumption for heating mode.

DANGER

Danger to life due to electric current!
There is a danger to life if live components are touched.

- ! Disconnect the product from the power supply at all poles.
- ! Check that no voltage is present.
- ! Secure the product against being switched on again.
- ! Only mount the product in dry indoor areas.

WARNING

Risk of injury from pressurised components!
Media escaping under pressure can cause injuries.

- ! Only carry out installation work when the system is depressurised.

For retrofitting an existing system:

- ! Drain the system or shut off the supply pipes of the system section and depressurise the system section.

CAUTION

Risk of injury due to the heavy weight of the station!
The station is heavy. Falling down can cause injuries.

- ! Always wear safety shoes during installation.

NOTICE

Damage to property due to overpressure in the system!
The safety valve only protects the potable water circuit within the fresh water station.

- ! Equip the potable water system with an additional (non-shut-off) safety valve in accordance with DIN EN 806-2.

NOTICE

Damage to property due to frost or overheating!
Frost or excessive ambient temperatures may damage components of the station.

- ! Mount the station in a dry, frost-free room in which the ambient temperature does not exceed 35 °C during operation.

- ▶ Before mounting the station, make sure that the pipes to the installation site have been laid, flushed and leak tested.
- ▶ Before mounting the station, make sure that power cables and earthing cables are routed to the installation site.
- ▶ Always mount the station upright, never inclined or lying down.
- ▶ The station must always be freely accessible even after mounting.
- ▶ The station should be installed as close as possible to the buffer storage cylinder. The pipe connection must have a nominal diameter of at least DN 20.

6.2 Wall mounting of the station

6.2.1 Required tools

Have the following tools ready for wall mounting:

- Pipe wrench
- Spirit level
- Drill (8 mm masonry drill bit)
- 10 mm open-end spanner / reversible ratchet with 10 mm socket
- 32 mm open-end spanner
- 38 mm open-end spanner
- 4 mm key for screws with hexagon socket
- Marking pen

6.2.2 Mounting

1 Pull the product out of the box.

2 Lift off the upper shell.

Fig. 10: Removal of the upper shell

3 Dismantle the wall bracket.

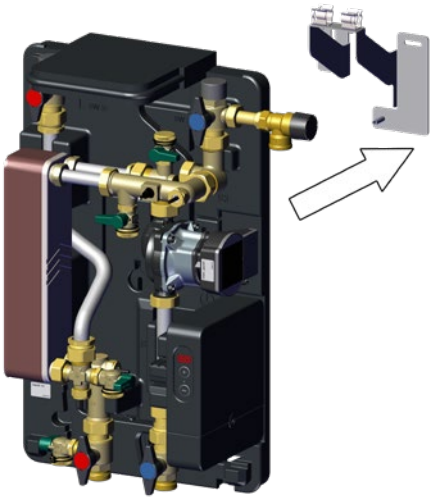

Fig. 11: Dismantling of the wall bracket

4 Hold the wall bracket horizontally against the wall to use it as a drilling template.

5 Mark two holes.

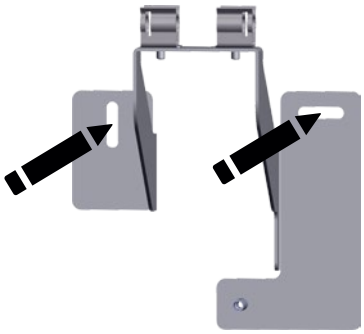

Fig. 12: Use of the wall bracket as drilling template

6 Drill the corresponding holes (ø 8 mm) and insert the dowels.

7 Screw the wall bracket onto the wall with two 10x60 mm screws and washers (supplied).

8 Hang the lower shell with the product assembly onto the wall bracket.

Make sure that the bracket audibly clicks into place. Make sure that the station is firmly seated on the bracket.

9 Place the washer in the contour provided in the lower shell.

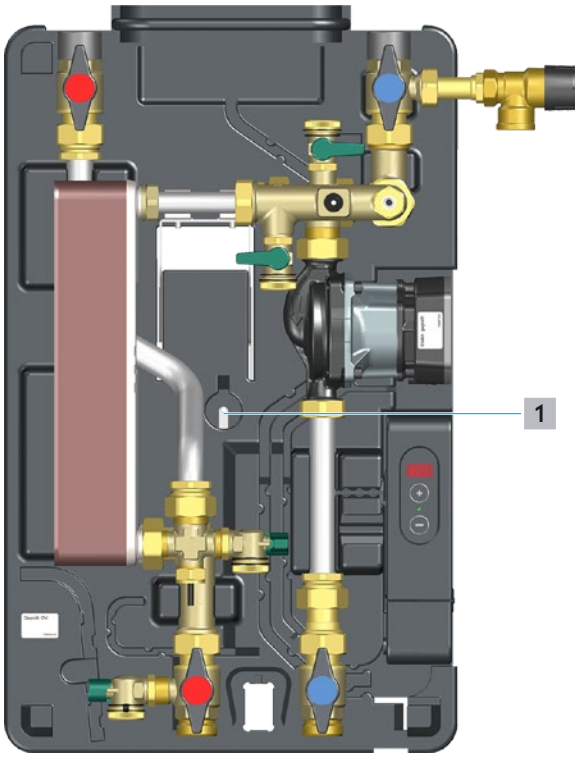

Fig. 13: Position of the washer

1	Position of the washer

10 Fix the lower shell with the cylinder screw with hexagon socket (M5 x 20). Tighten the screw to the metallic stop.

▷ Wall mounting of the fresh water station is completed. In the next step you can start with the piping.

6.3 Piping

All four supply and return connections are sized G 1 (flat sealing external thread).

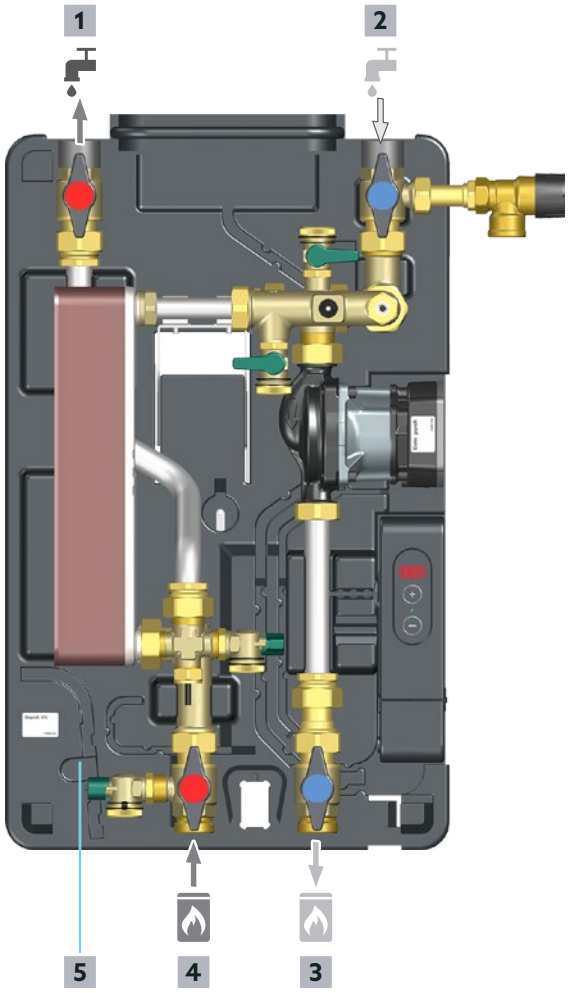

Fig. 14: Functional description

1	Hot potable water return
2	Cold potable water supply
3	Storage cylinder circuit return
4	Storage cylinder circuit supply
5	Recess for the discharge elbow of the water sampling valve

Manufacturer specifications and recommendations

- The supply pipe "storage cylinder circuit supply" for the fresh water station may only be connected to one connection pipe of the buffer storage cylinder (principle of hydronic decoupling). A joint connection with other components of the heating system (e.g. by means of a T-piece) is not permitted.
- Note the nominal widths for the spanners to be used, which are embedded in the lower shell.
- We recommend the installation of a strainer in the storage cylinder circuit supply.
- If necessary, mount another potable water filter (TF) (Oventrop accessory) as close as possible to the cold water connection of the station.
- If a circulation pipe is used, install a strainer suitable for potable water in the inlet of the circulation set, if necessary, so that any particles and foreign bodies do not get into the measuring turbine.
- Install a backflow preventer(position **4** in Fig. 4 on page 13) in the cold potable water supply (Position **2** in Fig. 14 on page 21), to separate the cold potable water from the already heated potable water within the station.
- When operating the fresh water station with Oventrop buffer storage cylinders of the "Hydrocor HP" series, connect the "storage cylinder circuit supply" to the connection pipe marked with an arrow in Fig. 15 and Fig. 16.
- Install an air vent on the upper dished bottom of the storage cylinder.
- If you operate the station in circulation mode, the water in the circulation circuit expands when the temperature increases and the station's safety valve is triggered. Install a diaphragm expansion tank suitable for potable water to prevent overpressure in the circulation circuit.

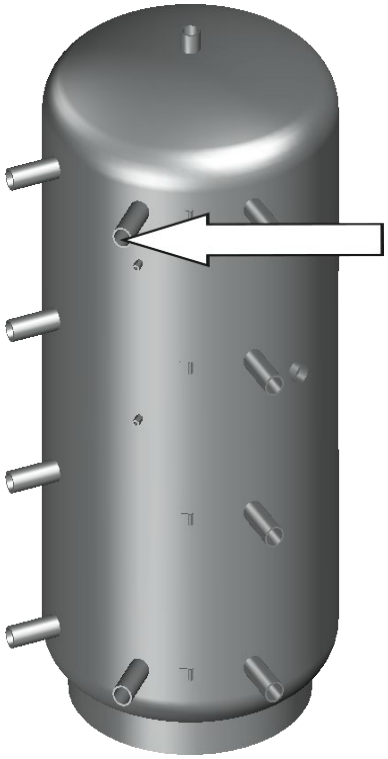

Fig. 15: Connection of the storage cylinder circuit supply to the buffer storage cylinder

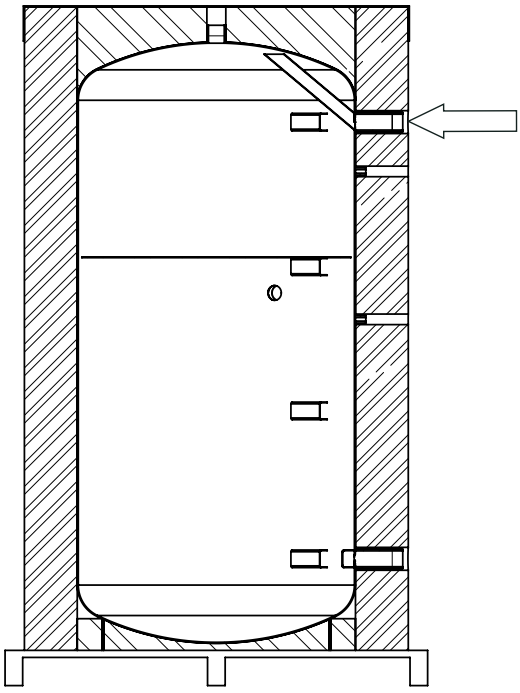

Fig. 16: Internal design of the buffer storage cylinder

6.4 Protective equipotential bonding/ earthing

Increased safety against electrical hazards

Protective equipotential bonding establishes a connection with good electrical conductivity between conductive bodies of electrical equipment and the main equipotential bonding bar (main earthing bar) of the building. (According to DIN VDE 0100, bodies are touchable conductive parts which, in contrast to the "active parts" of the equipment, can only be live as a result of a fault).

This measure serves to protect against electric shock and is standardised in IEC 60364-4-41:2005 and DIN VDE 0100-410:2007-06.

The technical design for equipotential bonding is standardised in IEC 60364-5-54:2011 and DIN VDE 0100-540:2012-06.

- ▶ Comply with applicable standards and country-specific regulations.
- ▶ Use an equipotential bonding conductor made of copper with a cross-section of at least 6 mm^2 .

⚠ DANGER

Danger to life due to electric current!
There is a danger to life if live components are touched.

- ! Disconnect the product from the power supply at all poles.
- ! Check that no voltage is present.
- ! Secure the product against being switched on again.
- ! Only mount the product in dry indoor areas.

The pump is not considered electrically conductive

Since the circulation pump cannot be considered electrically conductive, it is necessary to connect the piping upstream and downstream of the pump to the equipotential bonding bar. This can be done outside and inside the station. Suitable mounting points for earthing clamps inside the station are shown inFig. 1 on page 10Fig. 17 on page 23.

- ▶ Fit appropriate earthing clamps to the station's piping. Earthing clamps are available as accessory.

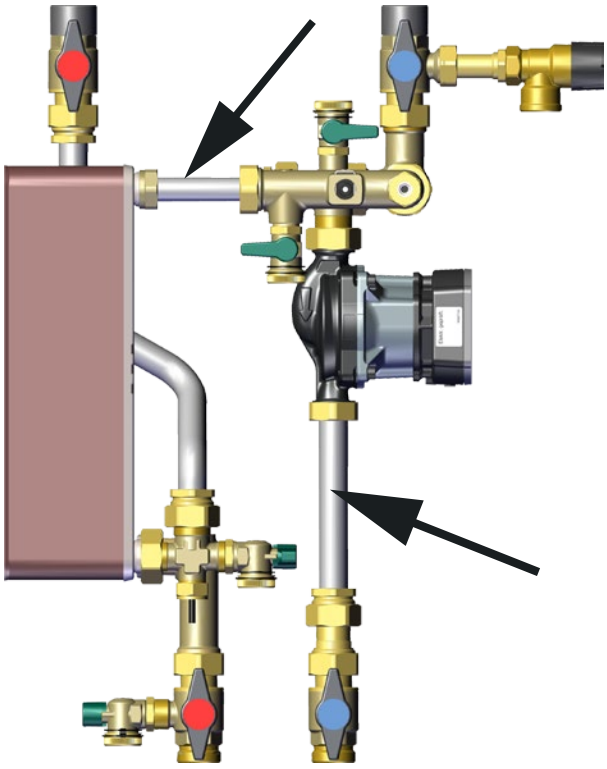

Fig. 17: Equipotential bonding

- Connect the earthing clamps to a suitable equipotential bonding bar in the building using an equipotential bonding conductor made of copper with a cross-section of at least 6 mm².

7. Commissioning

7.1 Filling and venting of the storage cylinder circuit

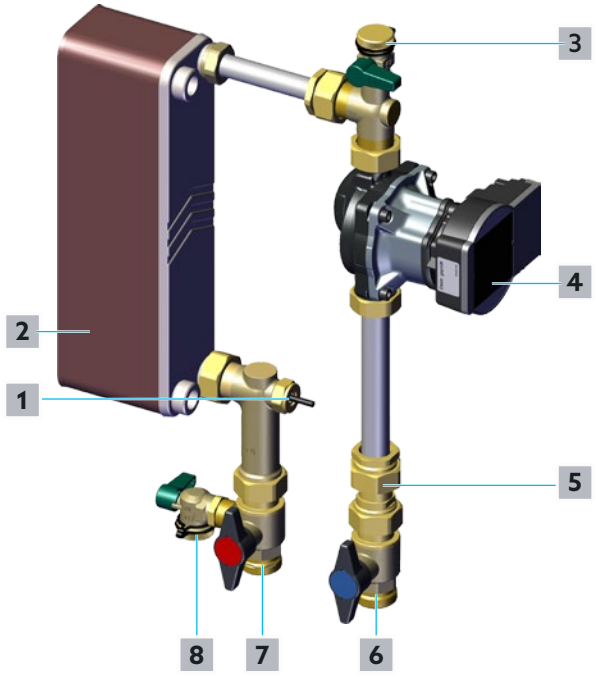

Fig. 18: Filling and venting of the storage cylinder circuit

1	Temperature sensor for storage cylinder circuit S1
2	Heat exchanger
3	Fill and drain ball valve for storage cylinder circuit return
4	Circulation pump for storage cylinder circuit
5	Backflow preventer in the storage cylinder circuit
6	Shutoff ball valve for storage cylinder circuit return
7	Shutoff ball valve for storage cylinder circuit supply
8	Fill and drain ball valve for storage cylinder circuit supply

⚠ CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

- ! Allow the system to cool down.
- ! Wear safety goggles.

⚠ CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

- ! Wear safety gloves.

NOTICE

Risk of damage due to pressure surge!
The abrupt filling of the station can lead to damage, e.g. to the sensors or sealing points.

! Always open and close ball valves slowly.

1. Slowly open the shutoff ball valve for storage cylinder circuit supply (position 7 in Fig. 18 on page 23 and position 2 in Fig. 2 on page 11).
2. Unscrew the cap of the fill and drain ball valve for storage cylinder circuit return (position 3 in Fig. 18 on page 23 and position 9 in Fig. 2 on page 11).
3. Connect a flushing hose to the fill and drain ball valve for storage cylinder circuit return.
4. Open the fill and drain ball valve for storage cylinder return slightly until air escapes.
5. Close the fill and drain ball valve for storage cylinder circuit return as soon as only water escapes here.
6. Remove the flushing hose and refit the cap of the fill and drain ball valve for storage cylinder circuit return.
7. Slowly open the shutoff ball valve for storage cylinder circuit return (position 6 in Fig. 18 on page 23 and position 9 in Fig. 2 on page 11).

Trapped air possible

During the tapping process, air remaining in the storage cylinder circuit is transported into the storage cylinder by the volume flow.

▶ If noises due to trapped air continue to occur in the pipe, repeat the venting process.

7.2 Filling and venting of the potable water circuit

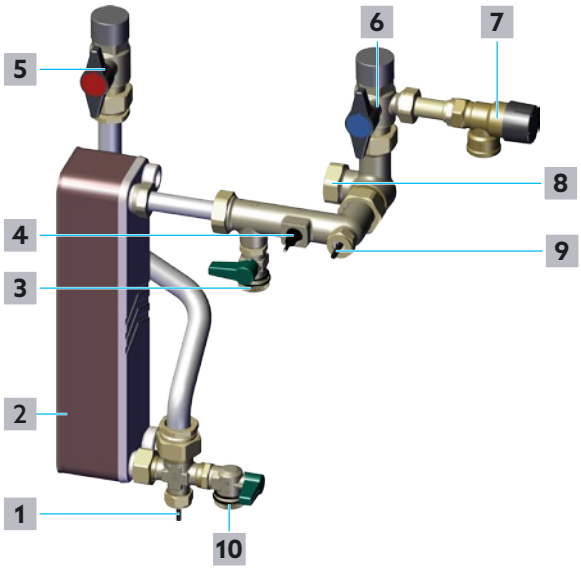

Fig. 19: Filling and venting of the potable water circuit

1	Temperature sensor for potable water (hot) S2
2	Heat exchanger
3	Fill and drain ball valve for potable water (cold)
4	Volume flow sensor for potable water circuit
5	Shutoff ball valve for potable water (hot)
6	Shutoff ball valve for potable water (cold)
7	Safety valve for potable water circuit (10 bar)
8	Connection for circulation pipe
9	Temperature sensor for potable water (cold)/ circulation S3
10	Fill and drain ball valve for potable water (hot)

⚠ CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

! Allow the system to cool down.
! Wear safety goggles.

⚠ CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

! Wear safety gloves.

NOTICE

Risk of damage due to pressure surge!
The abrupt filling of the station can lead to damage, e.g. to the sensors or sealing points.

! Always open and close ball valves slowly.

1 Slowly open the shutoff ball valve for potable water (hot) (position **5** in Fig. 19 on page 24 and position **10** in Fig. 2 on page 11).

2 Slowly open the shutoff ball valve for potable water (cold) (position **6** in Fig. 19 on page 24 and position **11** in Fig. 2 on page 11).

3 Perform a tapping process.

Trapped air possible

During the tapping process, air remaining in the potable water circuit is discharged via the draw-off point.

▶ If noises due to trapped air continue to occur in the potable water circuit, slightly open the fill and drain ball valve for potable water (hot) (position **10** in Fig. 19 on page 24 and position **16** in Fig. 2 on page 11) until only water escapes .

7.3 Electrical connection

Initialisation phase

After the power supply has been established, the controller goes through an initialisation phase.

NOTICE

Malfunctions due to electromagnetic fields!
Strong electromagnetic fields can impair the function of the controller.

! Ensure that the product is not exposed to strong sources of electromagnetic radiation.

When using a circulation set

If you use a potable water circulation set, observe the operating instructions for the accessory.

Disconnection of the power supply

It must be possible to disconnect the product from the mains at any time.

▶ Position the mains plug so that it is accessible at all times.

▶ If this is not possible, install a switch that is accessible at all times. In this case, it must be possible to disconnect the product from the mains at all poles via an additional device with an isolating distance of at least 3 mm or with a disconnecting device (fuse) in accordance with applicable installation regulations.

7.3.1 Power supply through the pre-assembled mains connection cable

Earthed socket

A fused earthed socket must be available at the installation location.

▶ Close the thermal insulation of the station by fitting the upper shell.

▶ Insert the plug of the pre-assembled mains connection cable into an earthed socket.

7.3.2 Power supply without the pre-assembled mains connection cable

Installation by a qualified electrician

If the pre-assembled earthing contact plug cannot be used, the power supply may only be established by a qualified electrician.

DANGER

Danger to life due to electric current!
There is a danger to life if live components are touched.

! Disconnect the product from the power supply at all poles.

! Check that no voltage is present.

! Secure the product against being switched on again.

! Only mount the product in dry indoor areas.

NOTICE

Damage to electronic components due to electrostatic discharge!

! Before touching the inside of the casing, ensure that the potentials are equalised by taking suitable measures. Touch an earthed component. This can be a water tap or a radiator, for example.

Disconnection of the power supply

Make sure that the product can be disconnected from the power supply at any time.

▶ Install a switch that is accessible at all times. It must be possible to disconnect the product from the mains at all poles via an additional device with an isolating distance of at least 3 mm or with a disconnecting device (fuse) in accordance with applicable installation regulations.

Mounting position

The controller receptacle in the lower shell is designed in such a way that you can easily fix the controller in a comfortable mounting position without tools.

1 Carefully pull the controller off the lower shell as shown in Fig. 20 on page 26.

NOTICE

Damage to the electrical lines and connections due to tensile forces!

Electrical lines or connections can break if excessive tensile forces are applied.

! Make sure that the cables connected to the controller are not subjected to strain.

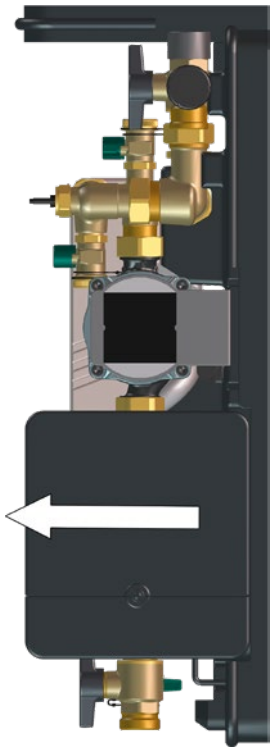

Fig. 20: Removal of the controller from the lower shell

2 Turn the controller and fix it in the mounting position as shown in Fig. 21 on page 26.

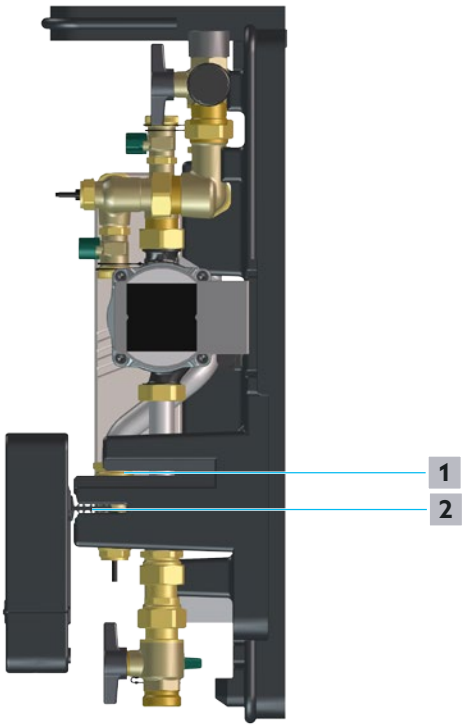

Fig. 21: Mounting position

1 Recess for operation position
2 Recess for mounting position

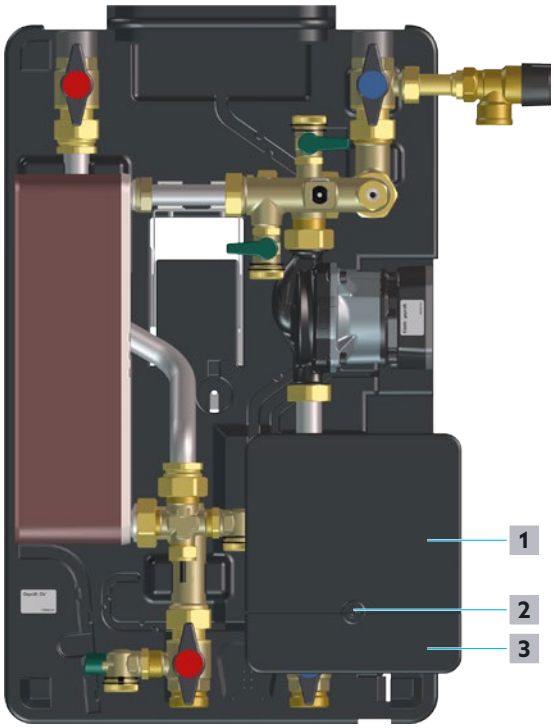

Fig. 22: Opening of the controller

1 Connection panel cover
2 Hexagon socket screw
3 Supply line cover

3 Loosen the screw (position 2 in Fig. 22 on page 26) and put it aside.

4 Slide the connection panel cover (position 1 in Fig. 22 on page 26) upwards until it audibly clicks into place.

5 Fold down the supply line cover (position 3 in Fig. 22 on page 26).

6 Guide the power line through the opening provided in the casing.

7 Carry out the electrical connections according to the terminal assignment (see Fig. 9 on page 17).

8 Fix the power line with a suitable cable tie for strain relief.

9 Close the supply line cover and the connection panel cover.

10 Tighten the screw.

11 Put the controller back from the mounting position to the operation position (see Fig. 20 on page 26).

12 Lay the electrical lines in the channels provided in the lower shell.

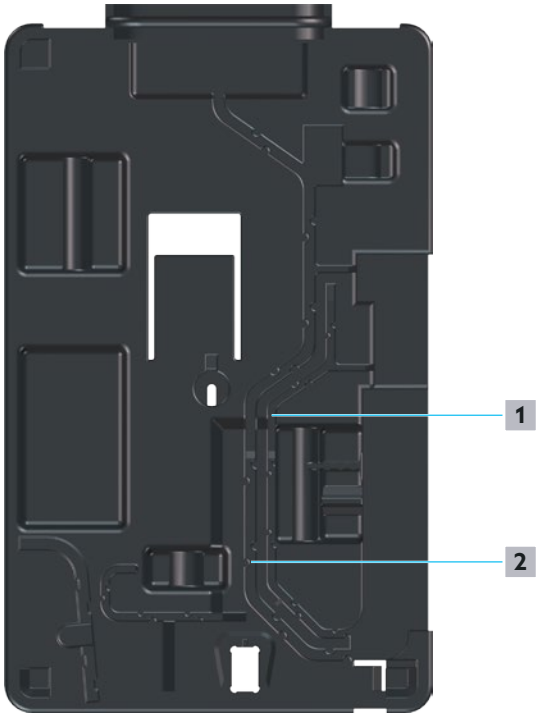

Fig. 23: Cable channels in the lower shell

1 Channel for sensor and control lines
2 Channel for 230 V line

13 Establish the power supply.

▷ The fresh water station is ready for operation.

7.3.3 Configuration of the circulation function (optional)

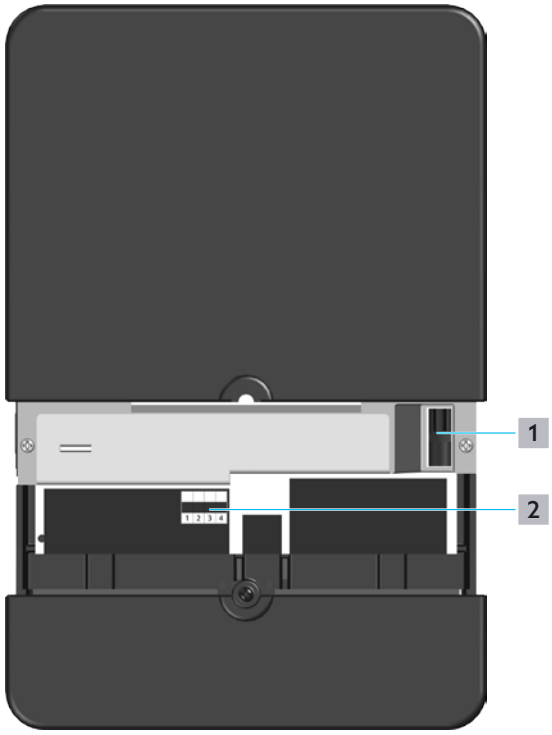

Fig. 24: Fuse holder and DIP switches

1 Fuse holder
2 DIP panel

If you use the circulation set, you can configure the function using DIP switches.

Observe the operating instructions supplied with the circulation set.

1 Disconnect the controller from the power supply at all poles.

2 Open the connection panel cover as described in steps 1 to 4 in section 7.3.2 on page 25.

3 Configure the DIP switches according to the desired functions.

4 Close the connection panel cover.

5 Tighten the screw.

6 Establish the power supply.

7.3.3.1 Activation of the circulation

DIP panel
Observe the position of the DIP panel in Fig. 24 on page 27.

7.3.3.2 Deactivation of the circulation

Factory setting
The circulation function is deactivated by default!

▶ Set the DIP switches 1 and 2 to "OFF".

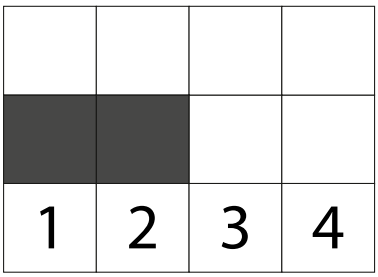

Fig. 25: Circulation deactivated

7.3.3.3 Activation of the circulation on request

Request means that the circulation pump is started for a period of 5 minutes after a hot potable water tapping lasting 1-3 seconds.

After these 5 minutes have elapsed, the circulation pump cannot be activated for 10 minutes. Tapping requests during this pause time are ignored.

▶ Set DIP switch 1 to "OFF" and DIP switch 2 to "ON".

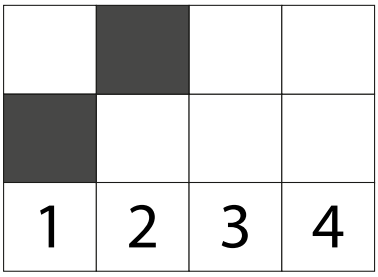

Fig. 26: Circulation activated

7.3.3.4 24-hour circulation mode

24-hour operation means that the circulation pump runs 24 hours at a stretch without interruption or switch-off criterion.

▶ Set DIP switch 1 to "ON" and DIP switch 2 to "OFF".

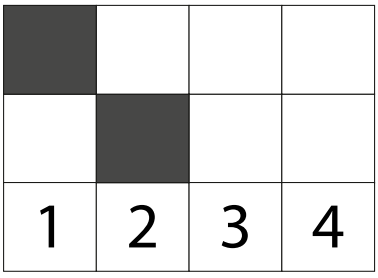

Fig. 27: 24-hour circulation mode

7.3.3.5 Thermally controlled circulation

The circulation pump is controlled depending on the temperature measured at the temperature sensor for potable water (cold)/circulation S3 (position **14** in Fig. 2 on page 11).

- The pump is switched on when the measured value is 6 Kelvin below the setpoint value.
- The pump is switched off when the measured value is 2 Kelvin below the setpoint value.

▶ Set the DIP switches 1 and 2 to "ON".

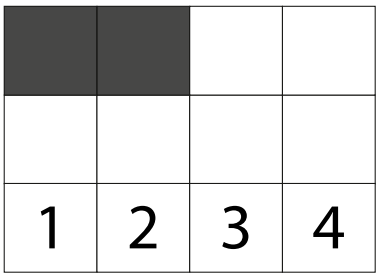

Fig. 28: Thermally controlled circulation

7.3.4 Extension of the maximum adjustable temperature

The maximum possible output temperature in the controller is preset to 60 °C at the factory. If your application requires higher temperatures, you have the option of increasing the maximum temperature up to 75 °C.

⚠ CAUTION

Risk of scalding due to excessively hot potable water at the draw-off points!

Due to setting or defect of the controller, the hot water temperature at the draw-off points can rise up to the heating water temperature in the buffer storage cylinder.

- ! If there is a risk of scalding in accordance with DIN EN 806 and DIN 1988 due to high heating water temperature in the buffer storage cylinder, you must install scald protections at all draw-off points.
- ! If you do not use scald protections at all draw-off points, regulate the temperature of the storage cylinder circuit down to such an extent that the temperature in the storage cylinder and thus the potable water temperature cannot cause any risk of scalding.
- ! Instruct the system operator to ensure the low storage cylinder temperature all year round.

NOTICE

High media temperatures (>60 °C) increase the risk of corrosion and energy costs!

- ! Do not set the hot water temperature higher than absolutely necessary.

7.3.4.1 Medium temperature up to 60 °C

- Set DIP switch 4 to "OFF".

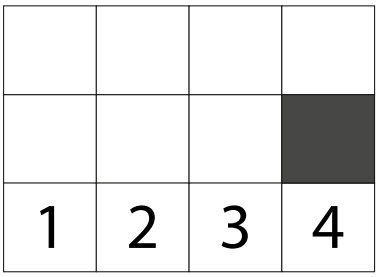

Fig. 29: Hot water temperature up to 60°C (default)

7.3.4.2 Medium temperature up to 75 °C

- Set DIP switch 4 to "ON".

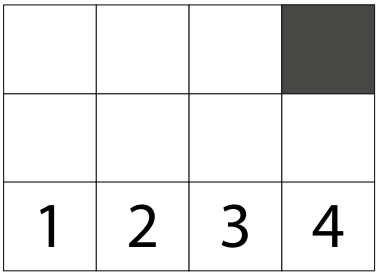

Fig. 30: Hot water temperature up to 75°C

7.4 Handover to the operator

- Once commissioning has been completed, fill in the handover report. You will find a corresponding form in the appendix. Sign the report and give a copy to the operator.
- Pass on these instructions and all applicable instructions (e.g. accessories instructions) to the operator. The instructions must be available at the place of use of the product.

8. Operation

8.1 Displays and control elements

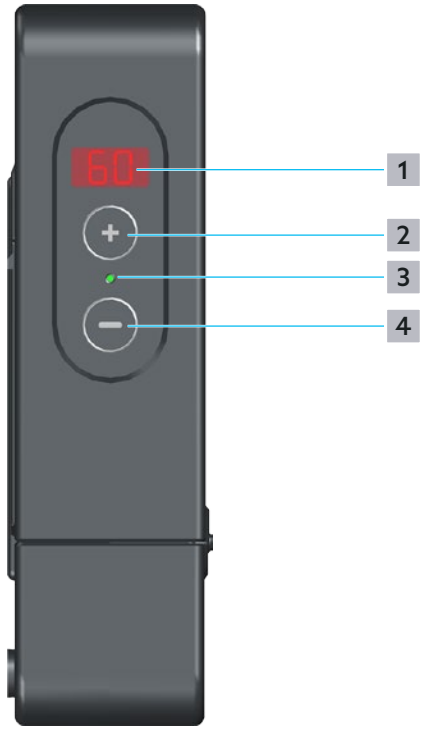

Fig. 31: Displays and control elements

1	Hot water setpoint temperature and status display
2	Key (+) for increasing the set value
3	Control LED
4	Key (-) for decreasing the set value

8.2 Controller presettings

8.2.1 Setting of the hot watersetpoint temperature

Possible presetting

- The hot water temperature can be set within a range of 25 °C to 75 °C .
- The factory-set hot water temperature is 60 °C.

▶ To increase or decrease the hot water temperature, press the "+" or "-" key.

▷ If no key is pressed for 5 seconds, the displayed temperature is saved.

⚠ CAUTION

Risk of scalding due to excessively hot potable water at the draw-off points!

Due to setting or defect of the controller, the hot water temperature at the draw-off points can rise up to the heating water temperature in the buffer storage cylinder.

- ! If there is a risk of scalding in accordance with DIN EN 806 and DIN 1988 due to high heating water temperature in the buffer storage cylinder, you must install scald protections at all draw-off points.
- ! If you do not use scald protections at all draw-off points, regulate the temperature of the storage cylinder circuit down to such an extent that the temperature in the storage cylinder and thus the potable water temperature cannot cause any risk of scalding.
- ! Instruct the system operator to ensure the low storage cylinder temperature all year round.

Key operation

- Pressing the "+" or "-" key continuously causes the display to count up or down.
- If the power supply fails during configuration, the previous value is saved.
- If no key is pressed for 30 seconds, the display goes out. Press a key to display the current set value.
- To view the values of the temperature sensors (S1, S2, S3), press and hold the "+" and "-" key for 3 seconds. The individual values appear one after the other on the display (position **1** in Fig. 31 on page 30).

8.2.2 Emergency mode (manual mode)

Emergency mode

Emergency mode is used to ensure hot water preparation even in the event of a sensor failure.

Emergency mode means that the speed of the pump is fixed at 50% of the capacity. When emergency mode is active, the LED flashes green/red.

Emergency mode can be activated or deactivated via the DIP switches (position **2** in Fig. 24 on page 27).

.

⚠ CAUTION

Risk of scalding due to excessively hot potable water at the draw-off points!

In emergency mode, the primary pump pumps water from the storage cylinder through the heat exchanger in an uncontrolled manner. In extreme cases, this can lead to the water at the draw-off points almost reaching the temperature of the storage cylinder water.

- ! In emergency mode, reduce the temperature of the storage cylinder circuit so that the temperature in the storage cylinder does not exceed the desired potable water temperature.
- ! Only use the emergency mode temporarily to ensure the supply of hot potable water on a makeshift basis. Immediately replace the defective sensor and restore controlled operation of the pump.

⚠ DANGER

Danger to life due to electric current!

There is a danger to life if live components are touched.

- ! Disconnect the product from the power supply at all poles.
- ! Check that no voltage is present.
- ! Secure the product against being switched on again.
- ! Only mount the product in dry indoor areas.

NOTICE

Damage to electronic components due to electrostatic discharge!

- ! Before touching the inside of the casing, ensure that the potentials are equalised by taking suitable measures. Touch an earthed component, This can be a water tap or a radiator, for example.

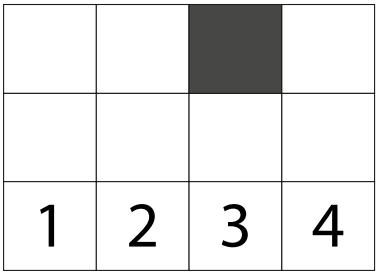

Fig. 32: DIP switch emergency mode

8.3 Blocking protection

Blocking protection

The blocking protection is used to prevent the primary pump from seizing up after long periods of standstill.

The pump is switched on for 5 seconds 24 hours after the end of its last activation.

8.4 Replacement of the fuse

The controller is protected by a fuse (T4AH250V) (position **1** in Fig. 24 on page 27).

Replacement fuse

The fuse holder contains a spare fuse when delivered.

⚠ DANGER

Danger to life due to electric current!

There is a danger to life if live components are touched.

- ! Disconnect the product from the power supply at all poles.
- ! Check that no voltage is present.
- ! Secure the product against being switched on again.
- ! Only mount the product in dry indoor areas.

NOTICE

Damage to electronic components due to electrostatic discharge!

- ! Before touching the inside of the casing, ensure that the potentials are equalised by taking suitable measures. Touch an earthed component. This can be a water tap or a radiator, for example.

1. Disconnect the controller from the power supply at all poles.
2. Loosen the screw (position **2** in Fig. 22 on page 26) and put it aside.
3. Slide the connection panel cover (position **1** in Fig. 22 on page 26) upwards until it audibly clicks into place.
4. Pull the fuse holder out of the socket.
5. Replace the fuse.
6. Close the connection panel cover.
7. Fix the bonnet by tightening the screw.
8. Restore the power supply.

9. Troubleshooting

9.1 Troubleshooting table

MALFUNCTION	CAUSE	REMEDY
The display is permanently off.	The controller is in standby mode.	Press a key to activate the display.
	The power supply to the controller is interrupted.	Establish the power supply.
	The controller fuse is defective.	Replace the fuse (see section 8.4 on page 31).
The target temperature is not reached. The circulation pump makes unusual noises.	The system has not been vented.	Vent the system (see section 7.1 on page 23for the storage cylinder circuit and section 7.2 on page 24 for the potable water circuit).
The potable water is not heated. Only cold water is available at the draw-off points.	The volume flow sensor is contaminated or defective.	Clean the volume flow sensor or replace a defective volume flow sensor (see section 9.5 on page 37).
	The controller is not in operation (de-energised).	Check the power supply of the controller or establish the power supply. Replace the fuse if necessary (see section 8.4 on page 31).
	There is an air inclusion in the storage cylinder circuit.	Check the air vents in the storage cylinder circuit for correct positioning, function and open position.
	The circulation pump in the storage cylinder circuit is defective (pump does not run when hot water is tapped).	Replace the circulation pump in the storage cylinder circuit.
The hot water temperature drops at the draw-off point(s).	The heating water temperature in the buffer storage cylinder is too low.	Increase the buffer storage cylinder temperature. Check the output of the heat generator.
	The storage cylinder capacity is not sufficient.	Increase the storage cylinder capacity. Check the system design.
During circulation operation, the water at the draw-off point cools down abruptly.	Cold water flows directly into the circulation pipe instead of into the heat exchanger. The check valve in the circulation pipe (accessory) is contaminated or defective.	Clean or replace the check valve.
With larger draw-off quantities, the target temperature is no longer reached.	The storage cylinder temperature is not sufficient for the requested draw-off quantity.	Increase the heating water temperature in the buffer storage cylinder.
	The heat exchanger is contaminated.	Clean the storage cylinder circuit side of the heat exchanger.
	The heat exchanger is calcified.	Decalcify the potable water side of the heat exchanger.
Water leakage or leaks at the heat exchanger (external). Pressure increase in the storage cylinder circuit (potable water enters the storage cylinder circuit). The safety valve in the storage cylinder circuit may be triggered.	Leakage at the heat exchanger due to corrosion. This can be the result of a heat exchanger that is unsuitable for the potable water quality.	Replace the heat exchanger. Match the new heat exchanger to the potable water quality (see Oventrop information sheet on corrosion protection in the appendix).

MALFUNCTION	CAUSE	REMEDY
The discharge capacity at the draw-off points is too low.	The heat exchanger is heavily calcified.	Decalcify the potable water side of the heat exchanger.
	The cold water pressure is too low (the pressure reducer is set incorrectly).	Check the setting of the pressure reducer. Increase the pressure if necessary.

9.2 Displays and error messages

The hot water setpoint temperature and status display (position **1** in Fig. 31 on page 30) shows the setpoint temperature and error codes.

Errors are signalled in combination with a control LED.

9.2.1 Error messages on the display

Error code	Error	LED display
E1	Temperature sensor for storage cylinder circuit S1	Flashing red
E2	Temperature sensor for potable water (hot) S2	Flashing red
E3	Temperature sensor for potable water (cold)/circulation S3	Flashing red
E4	(LIN) pump error	Flashing red

Resetting the error message
When the error has been corrected, the error message is automatically reset.

9.2.2 Control LED

Colour	Permanently lit	Flashing
Green	Hot potable water preparation active	Standby
Red/green		Emergency mode active
Red		Error

9.3 Nominal resistances of the temperature sensors

°C	Ω PT 1000
-10	961
-5	980
0	1000
5	1019
10	1039
15	1058
20	1078
25	1097
30	1117
35	1136
40	1155
45	1175
50	1194
55	1213
60	1232
65	1252
70	1271
75	1290
80	1309
85	1328
90	1347
95	1366
100	1385
105	1404
110	1423
115	1442

9.4 Decalcification of the heat exchanger

If you notice during operation of the system that the potable water is no longer heated to to the required temperature, even though the controller does not indicate an error and you have not changed the temperature setting, limescale deposits may have formed in the heat exchanger.

Due to the high temperatures in fresh water stations, calcification of the installed heat exchangers cannot generally be avoided. This is especially true when using a circulation pipe.

NOTICE

Risk of environmental pollution!
Chemicals for decalcification can cause environmental damage if disposed of improperly.

! Follow the decalcifying agent manufacturer's disposal instructions.

You can decalcify the heat exchanger both when it is removed and when it is installed.

9.4.1 Decalcification of the potable water circuit with the heat exchanger installed

⚠ CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

! Allow the system to cool down.

! Wear safety goggles.

⚠ CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

! Wear safety gloves.

NOTICE

Risk of damage due to pressure surge!
The abrupt injection of water into the station can lead to damage, e.g. to the sensors or sealing points.

! Always open and close ball valves slowly.

1 Disconnect the controller from the power supply at all poles.

2 Close the shutoff ball valve for potable water (hot) (position **10** in Fig. 2 on page 11).

3 Close the shutoff ball valve for potable water (cold) (position **11** in Fig. 2 on page 11).

4 Close the shutoff ball valve for storage cylinder circuit return (position **1** in Fig. 2 on page 11).

5 Close the shutoff ball valve for storage cylinder circuit supply (position **2** in Fig. 2 on page 11).

6 Unscrew the caps of the fill and drain ball valves for potable water (cold and hot) (positions **7** and **16** in Fig. 2 on page 11).

7 Connect one flushing hose each to the fill and drain ball valves for potable water (cold and hot) (positions **7** and **16** in Fig. 2 on page 11).

Flow direction of the decalcifying agent

Observe the flow direction of the decalcifying agent. It must flow in the opposite direction to the intended flow direction of the potable water in the potable water circuit.

Only use a decalcifying agent approved by the DVGW, e.g. based on citric acid, to decalcify the heat exchanger. Observe DVGW Codes of Practice W 291 and 319!

8 Slowly open the fill and drain ball valves for potable water (cold and hot) (positions **7** and **16** in Fig. 2 on page 11) to initiate flushing with the decalcifying agent.

9 Finish the flushing process after the prescribed exposure time has elapsed.

Exposure time

The exposure times depend on the decalcifying agents used. Decalcifying agents may have to be heated. Follow the instructions of the decalcifying agent manufacturer!

10 Drain the liquid with the flushed out limescale residues from the flushing circuit.

Flushing with a lye solution

11 Neutralise the potable water circuit by flushing with a lye solution.

12 Close the upper fill and drain ball valve.

13 Remove the flushing hoses.

▷ The decalcification flushing is completed.

Flushing of the potable water circuit with potable water

14 Connect the drain hose for potable water to the lower fill and drain ball valve.

15 Open the shutoff ball valve for potable water (cold) (position **11** in Fig. 2 on page 11) slightly.

▷ The heat exchanger is flushed with potable water.

16 Wait for at least one minute.

17 Close the fill and drain ball valve for potable water (hot) (position **16** in Fig. 2 on page 11).

18 Remove the drain hose.

19 Screw the caps back onto the fill and drain ball valves for potable water (cold and hot).

▷ The decalcification of the potable water circuit with the heat exchanger installed is completed.

9.4.2 Cleaning of the heat exchanger (storage cylinder circuit side)

A loss of performance may also be due to contamination of the storage cylinder circuit. As a further measure, the storage cylinder circuit should always be flushed first before considering replacing the heat exchanger.

⚠ CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

- ! Allow the system to cool down.
- ! Wear safety goggles.

⚠ CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

- ! Wear safety gloves.

1 Disconnect the controller from the power supply at all poles.

2 Close the shutoff ball valve for potable water (hot) (position **10** in Fig. 2 on page 11).

3 Close the shutoff ball valve for potable water (cold) (position **11** in Fig. 2 on page 11).

4 Close the shutoff ball valve for storage cylinder circuit return (position **1** in Fig. 2 on page 11).

5 Close the shutoff ball valve for storage cylinder circuit supply (position **2** in Fig. 2 on page 11).

6 Unscrew the caps of the fill and drain ball valves for storage cylinder circuit return and storage cylinder circuit supply (positions **9** and **3** in Fig. 2 on page 11).

7 Connect one flushing hose each to the fill and drain ball valves for storage cylinder circuit return and storage cylinder circuit supply (positions **9** and **3** in Fig. 2 on page 11).

8 Slowly open the fill and drain ball valves for storage cylinder circuit return and storage cylinder circuit supply (positions **9** and **3** in Fig. 2 on page 11) to initiate flushing. Flush for at least 5 minutes.

9 Drain the liquid and the flushed residues from the flushing circuit.

10 Close the fill and drain ball valve for storage cylinder circuit return (position **9** in Fig. 2 on page 11).

11 Close the fill and drain ball valve for storage cylinder circuit supply (position **3** in Fig. 2 on page 11).

12 Remove the flushing hoses.

13 Screw the caps back onto the fill and drain ball valves.

NOTICE

Risk of damage due to pressure surge!
The abrupt injection of water into the station can lead to damage, e.g. to the sensors or sealing points.

- ! Always open and close ball valves slowly.

14 Open the shutoff ball valves (positions **10**, **11**, **1** and **2** in Fig. 2 on page 11).

15 Restore the power supply for the fresh water station.

▷ Cleaning is completed.

9.4.3 Decalcification of the removed heat exchanger

CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

- ! Allow the system to cool down.
- ! Wear safety goggles.

CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

- ! Wear safety gloves.

NOTICE

Risk of damage due to pressure surge!
The abrupt injection of water into the station can lead to damage, e.g. to the sensors or sealing points.

- ! Always open and close ball valves slowly.

1 Disconnect the controller from the power supply at all poles.

2 Close the shutoff ball valve for potable water (hot) (position **10** in Fig. 2 on page 11).

3 Close the shutoff ball valve for potable water (cold) (position **11** in Fig. 2 on page 11).

4 Close the shutoff ball valve for storage cylinder circuit return (position **1** in Fig. 2 on page 11).

5 Close the shutoff ball valve for storage cylinder circuit supply (position **2** in Fig. 2 on page 11).

6 Unscrew the caps of the fill and drain ball valves (positions **7**, **9**, **16** and **3** in Fig. 2 on page 11).

7 Connect one drain hose each to the fill and drain ball valve for potable water (hot) and storage cylinder circuit supply (positions **16** and **3** in Fig. 2 on page 11).

8 Open the fill and drain ball valves to drain the pipes and the heat exchanger.

9 Loosen all four union nuts of the heat exchanger using 32 and 38 mm open-end spanners.

10 Carefully remove the heat exchanger and place it on a flat surface with the connections facing upwards.

Decalcifying agent

Only use a decalcifying agent approved by the DVGW, e.g. based on citric acid, to decalcify the heat exchanger. Observe DVGW Codes of Practice W 291 and 319!

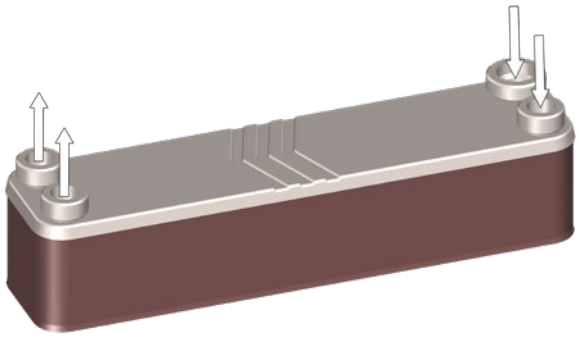

Fig. 33: Decalcification of the removed heat exchanger

11 Fill both circuits of the heat exchanger with decalcifying agent.

12 Finish the process after the prescribed exposure time has elapsed.

Exposure time

The exposure times depend on the decalcifying agents used. Decalcifying agents may have to be heated. Follow the instructions of the decalcifying agent manufacturer!

13 Drain the decalcifying agent.

14 Neutralise both circuits of the heat exchanger by flushing with a lye solution.

15 Flush both circuits of the heat exchanger with potable water for at least one minute.

Flat seals

The removed flat seals are not reusable. Use new seals for reassembly (available as accessories).

16 Reinstall the heat exchanger in the station in the reverse order of removal.

17 Vent the potable water circuit (see section 7.2 on page 24) and the storage cylinder circuit (see section 7.1 on page 23).

9.5 Cleaning of the volume flow sensor

If no hot potable water can be added at the draw-off points, there is an operational fault. As listed in the troubleshooting table in section 9.1 on page 32, this can have several causes.

▶ If easy to determine causes such as a de-energised controller can be ruled out, check the volume flow sensor for contamination.

Malfunctions due to contamination

A contaminated sensor means that the volume flow of the cold water inlet or of the cold water inlet with circulation pipe is no longer detected. As a result, no more tapping is registered and the circulation pump of the storage cylinder circuit is no longer activated. In the heat exchanger, energy is no longer transferred to the potable water circuit.

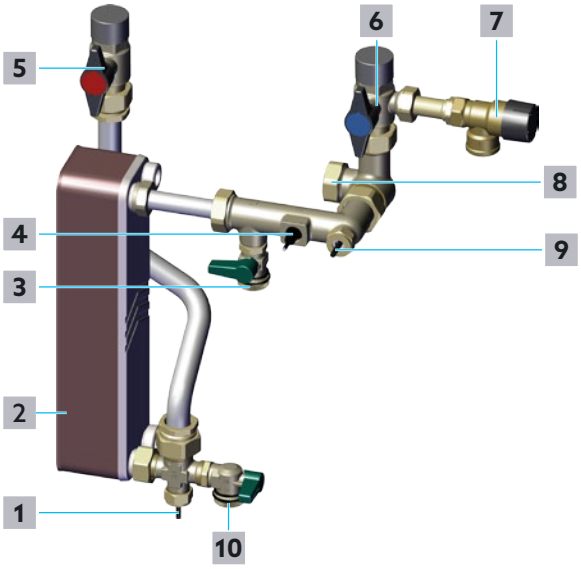

Fig. 34: Potable water circuit

1	Temperature sensor for potable water (hot) S2
2	Heat exchanger
3	Fill and drain ball valve for potable water (cold)
4	Volume flow sensor for potable water circuit
5	Shutoff ball valve for potable water (hot)
6	Shutoff ball valve for potable water (cold)
7	Safety valve for potable water circuit (10 bar)
8	Connection for circulation pipe
9	Temperature sensor for potable water (cold)/ circulation S3
10	Fill and drain ball valve for potable water (hot)

9.5.1 Required tools

- 12, 37 and 38 mm open-end spanner
- Fuse tongs J2 (e.g. EAN 4003773048534).
- Slotted screwdriver

9.5.2 Cleaning of the measuring turbine

⚠ CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

! Allow the system to cool down.

! Wear safety goggles.

⚠ CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

! Wear safety gloves.

NOTICE

Risk of damage due to pressure surge!
The abrupt injection of water into the station can lead to damage, e.g. to the sensors or sealing points.

! Always open and close ball valves slowly.

1. Disconnect the controller from the power supply at all poles.
2. Slowly close the shutoff ball valve for potable water (hot) (position **5** in Fig. 34 on page 37 and position **10** in Fig. 2 on page 11).
3. Slowly close the shutoff ball valve for potable water (cold) (position **6** in Fig. 34 on page 37 and position **11** in Fig. 2 on page 11).
4. Unscrew the cap of the fill and drain ball valve for potable water (hot) (position **10** in Fig. 34 on page 37 and position **16** in Fig. 2 on page 11).
5. Connect the drain hose for potable water to the fill and drain ball valve for potable water (hot) (position **10** in Fig. 34 on page 37 and position **16** in Fig. 2 on page 11).
6. Open the fill and drain ball valve for potable water (hot) (position **10** in Fig. 34 on page 37 and position **16** in Fig. 2 on page 11).

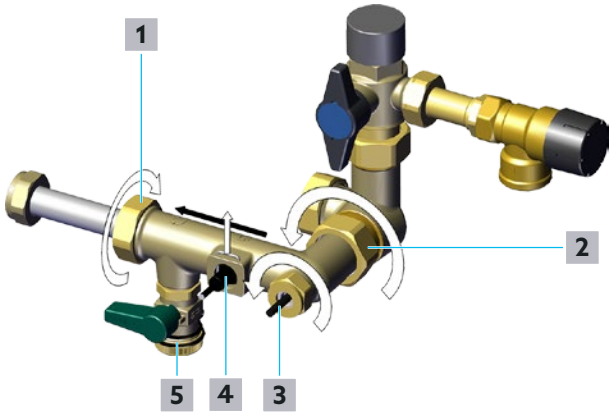

Fig. 35: Cleaning of the measuring turbine

1	Union nut heat exchanger side
2	Union nut cold potable water supply
3	Temperature sensor for potable water (cold)/ circulation S3
4	Volume flow sensor for potable water circuit
5	Fill and drain ball valve for potable water (cold)

7 Loosen the clamp of the volume flow sensor (position **4** in Fig. 35 on page 38) and put it aside.

8 Loosen the union nut of the temperature sensor for potable water (cold)/circulation S3 (position **3** in Fig. 35 on page 38).

9 Carefully pull the volume flow sensor for potable water circuit (position **4** in Fig. 35 on page 38) and the temperature sensor for potable water (cold)/ circulation S3 (position **3** in Fig. 35 on page 38) out of the fitting.

10 Remove the O-ring of the temperature sensor and and keep it protected against dirt until it is reinstalled.

11 Loosen the union nut cold potable water supply (position **2** in Fig. 35 on page 38) with a 38 mm open-end spanner.

12 Loosen the union nut heat exchanger side (position **1** in Fig. 35 on page 38) with a 37 mm open-end spanner.

13 Carefully remove the fitting from the station.

NOTICE

Overheating of the measuring turbine!

The bearing of the measuring turbine is cooled by the water flow during operation. The use of compressed air for cleaning can lead to irreparable damage due to overheating.

! Clean the measuring turbine with running water only.

14 Clean the sleeve with measuring turbine. Remove residues such as hemp residues with (running) water. Direct the flowing water through the fitting in the opposite direction to the flow direction (from the direction of position **1** in the direction of position **2** in Fig. 35 on page 38). A water hose with an appropriate spray nozzle is particularly suitable for this purpose.

15 Check that the measuring turbine has been cleared of foreign substances and is running smoothly again.

16 If the cleaning was successful, install the fitting in the reverse order of removal.

Unsuccessful cleaning

If the measuring turbine is still blocked, you must remove the sleeve with measuring turbine as described in section 9.5.2.1.

Use of new seals

The removed flat seals are not reusable. Use new seals for reassembly

17 Close the fill and drain ball valve for potable water (hot) (position **10** in Fig. 34 on page 37 and position **16** in Fig. 2 on page 11).

18 Vent the potable water circuit (see section 7.2 on page 24)

19 Restore the power supply.

9.5.2.1 Removal of the measuring turbine

Required tools

Circlip pliers J2 (e.g. EAN 4003773-048534).

1 Loosen the circlip (position **1** in Fig. 36 on page 38) with suitable circlip pliers.

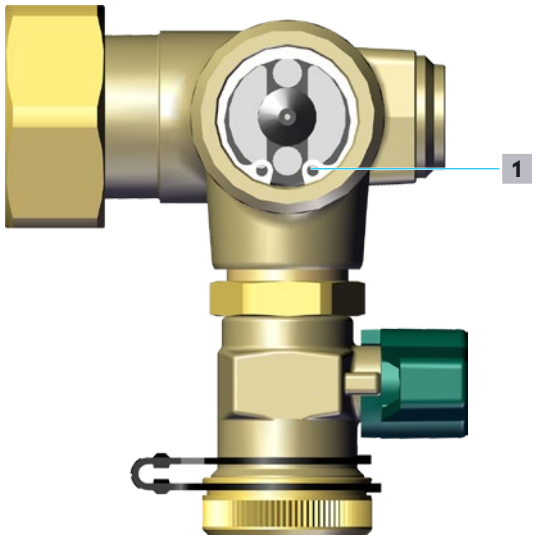

Fig. 36: Circlip

1	Circlip

2 Loosen the circlip.

3 Carefully push the sleeve with measuring turbine out with your finger in the flow direction until it can be

moved freely.

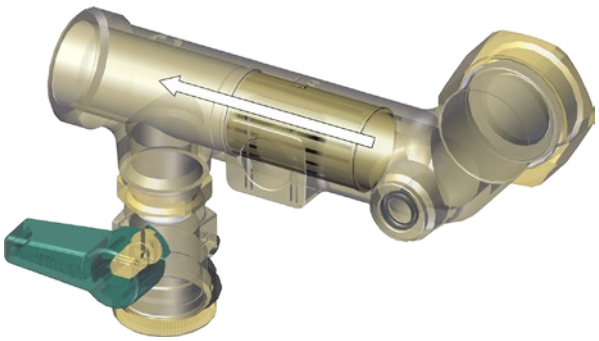

Fig. 37: Loosening of the measuring turbine

4 Remove the sleeve with measuring turbine.

NOTICE

Overheating of the measuring turbine!

The bearing of the measuring turbine is cooled by the water flow during operation. The use of compressed air for cleaning can lead to irreparable damage due to overheating.

! Clean the measuring turbine with running water only.

5 Clean the sleeve with measuring turbine. Remove residues such as hemp remains with (running) water. Direct the flowing water through the sleeve in the opposite direction to the flow direction. A water hose with an appropriate spray nozzle is particularly suitable for this purpose.

6 Check that the measuring turbine has been cleared of foreign substances and is running smoothly again.

7 If the measuring turbine cannot be loosened even when removed, the sleeve with measuring turbine must be replaced.

9.5.2.2 Installation of the measuring turbine

Flow direction

Observe the flow direction of the measuring turbine.

Use of new seals

The removed flat seals are not reusable. Use new seals for reassembly (available as accessories).

Fig. 38: Installation of the measuring turbine

1 Guide the sleeve with measuring turbine back into the fitting in the reverse direction of removal.

2 Insert the circlip (position **1** in Fig. 36 on page 38).

3 Install the fitting in the reverse order of removal.

4 Install the volume flow sensor for potable water circuit (position **4** in Fig. 35 on page 38) and the temperature sensor for potable water (cold)/ circulation S3 (position **3** in Fig. 35 on page 38).

Correct positioning

Make sure that the O-ring is positioned correctly.

5 Close the fill and drain ball valve for potable water (hot) (position **10** in Fig. 34 on page 37 and position **16** in Fig. 2 on page 11).

6 Vent the potable water circuit (see section 7.2 on page 24)

7 Restore the power supply.

10. Maintenance

CAUTION

Risk of scalding due to hot media!
If the station was in operation, there is a risk of scalding due to unintentional escape of hot water or water vapour.

- ! Allow the system to cool down.
- ! Wear safety goggles.

CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

- ! Wear safety gloves.

10.1 Maintenance

Carry out the following maintenance work once a year.

Maintenance report

Complete the maintenance report promptly after the completion of each maintenance. You will find a corresponding form in the appendix. Sign the report and provide the operator with a copy.

10.1.1 Leakage check (visual inspection)

1. Check all connections to the outside to the pipework and inside the station for moisture. If necessary, retighten screw connections or replace defective seals.
2. Check the heat exchanger for damp spots.

Detection of leaks

Especially in connection with discolouration, damp spots indicate the formation of corrosion. Leaking heat exchangers must be replaced.

10.1.2 System pressure check

1. Compare the actual values in the storage cylinder and the potable water circuit with the last maintenance or handover report.
2. Readjust deviations in the potable water circuit at the pressure reducer.
3. If the pressure in the storage cylinder circuit is too low, increase the water pressure.
4. If the pressure in the storage cylinder is too high, there could be a corrosion problem in the heat exchanger. Defective heat exchangers must be replaced.

10.1.3 Functional check of the safety valves (potable water circuit)

- ▶ Check the function of the safety valves at six-month intervals in accordance with DIN EN 806-5.

10.1.4 Water sampling

- ▶ If required by law for your application environment, take samples from the potable water circuit of your installation at the prescribed intervals.
  To do this, connect a water sampling valve to the fill and drain ball valve for potable water (hot) (position **16** in Fig. 2 on page 11).

Furthest draw-off point

Another sample must be taken at the furthest draw-off point.

Third water sampling valve

Insofar as an additional pipe is used for circulation operation, connect a third water sampling valve to the intended connection and take an appropriate water sample there.

10.1.5 Actuation of the four shutoff ball valves

NOTICE

Risk of damage due to pressure surge!
The abrupt injection of water into the station can lead to damage, e.g. to the sensors or sealing points.

- ! Always open and close ball valves slowly.

- ▶ In the course of maintenance, actuate the four shutoff ball valves (positions **10**, **11**, **1** and **2** in Fig. 2 on page 11). This loosens deposits and keeps the valves operable.

10.1.6 Electrical components and plug connections

- ▶ Check the cable plug connections of all components connected to the controller for firm seating and integrity.
- ▶ Check the correct positioning of the temperature sensors.

10.1.7 Functional control of the check valve of the circulation set

- ▶ If you use a circulation set in the potable water system, check the check valve for correct functioning. Observe the documentation of the potable water circulation set.

Annual control of the check valve

The annual control of the check valve is a normative requirement according to DIN EN 806-5.

10.1.8 Replacement of the potable water filter insert

- ▶ During maintenance, also consider the potable water

filter installed in the cold water inlet of the station. Replace the filter insert annually with a new one (item no. 6125101).

11. Notes for the operator

- Have the specialist tradespeople instruct you in the safe and intended use of the station and the necessary maintenance work.
- Carry out a visual inspection at least once a month. When doing so, pay attention to whether moisture is leaking. In case of water leakage, inform the responsible installation company.
- Trigger the station safety valve (position **12** in Fig. 2 on page 11) once every six months.
  To do this, turn the plastic cap of the valve anticlockwise until a "click" sound is clearly audible.

General notes on setting the potable water temperature

The controller is preset to a potable water temperature of 60 °C. In principle, however, you have the option of increasing the potable water temperature at the draw-off points via the controller. Since this temperature is detected by a sensor at the hot water outlet of the heat exchanger, it is not the same as the hot water temperatures at the draw-off points.

If you want to increase the water temperature at the draw-off points, you can increase the potable water setpoint temperature via the "+" key (e.g. in 5 °C steps).

Increasing the hot water temperature always means increasing the energy consumption and decreasing the hot water temperature always means saving energy.

⚠ CAUTION

Risk of scalding due to excessively hot potable water at the draw-off points!

Due to setting or defect of the controller, the hot water temperature at the draw-off points can rise up to the heating water temperature in the buffer storage cylinder.

- ! If there is a risk of scalding in accordance with DIN EN 806 and DIN 1988 due to high heating water temperature in the buffer storage cylinder, you must install scald protections at all draw-off points.
- ! If you do not use scald protections at all draw-off points, regulate the temperature of the storage cylinder circuit down to such an extent that the temperature in the storage cylinder and thus the potable water temperature cannot cause any risk of scalding.

Legionella prevention

Legionella multiply particularly quickly if the hot water temperature is constantly too low or if the water is left standing for a long time(> 72 h) without being tapped.

- Tap water regularly to ensure regular potable water replacement and to prevent prolonged periods of standing potable water.
- After each standing period of 72 h or more, run the water at all draw-off points for a short time to replace the potable water in the pipes.
- When using a circulation pipe, the hot water temperature must be at least 60 °C.

12. Dismantling and disposal

End of service life

When the fresh water station reaches the end of its service life or has an irreparable defect, it must be dismantled and disposed of in an environmentally friendly manner or the components must be recycled.

12.1 Dismantling of the station

12.1.1 Disconnection of the station from the power supply

DANGER

Danger to life due to electric current!
There is a danger to life if live components are touched.

- ! Disconnect the product from the power supply at all poles.
- ! Check that no voltage is present.
- ! Secure the product against being switched on again.
- ! Only mount the product in dry indoor areas.

▶ Disconnect the station permanently from the power supply.

▷ The station is de-energised and can be dismantled.

12.1.2 Dismantling of the station

CAUTION

Risk of injury from pressurised media!
Media escaping under pressure can cause injuries.

- ! Only carry out work when the system is depressurised.
- ! Wear safety goggles.

CAUTION

Risk of burns on hot components!
Touching hot components can cause burns.

- ! Allow the system to cool down.
- ! Wear safety gloves.

▶ Dismantle the station.

▷ The station can be disposed of separately according to components.

12.2 Disposal

Directive 2012/19/EU WEEE:

- The "crossed-out wheeled bin" symbolises that you are legally obliged to dispose of old appliances separately from unsorted municipal waste. Incorrect disposal can lead to environmental damage.
- Remove used batteries and accumulators not enclosed in the old appliance as well as lamps from the old appliance without destroying them and dispose of them separately.
- You can hand in your old appliance free of charge within the framework of the possibilities provided by the public waste disposal authorities.
- Distributors with a sales area for electrical and electronic equipment of at least 400 square meters are obliged to take back your old appliance free of charge when you buy a similar new appliance (1:1 take-back). You can also return all old appliances to distributors free of charge if the external dimensions do not exceed 25 centimetres and the return is limited to three old appliances per type of appliance.
- Delete your personal data stored on the old device to be disposed of, if any, on your own responsibility.

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14. Appendix

14.1 Characteristic line for Wilo circulation pump

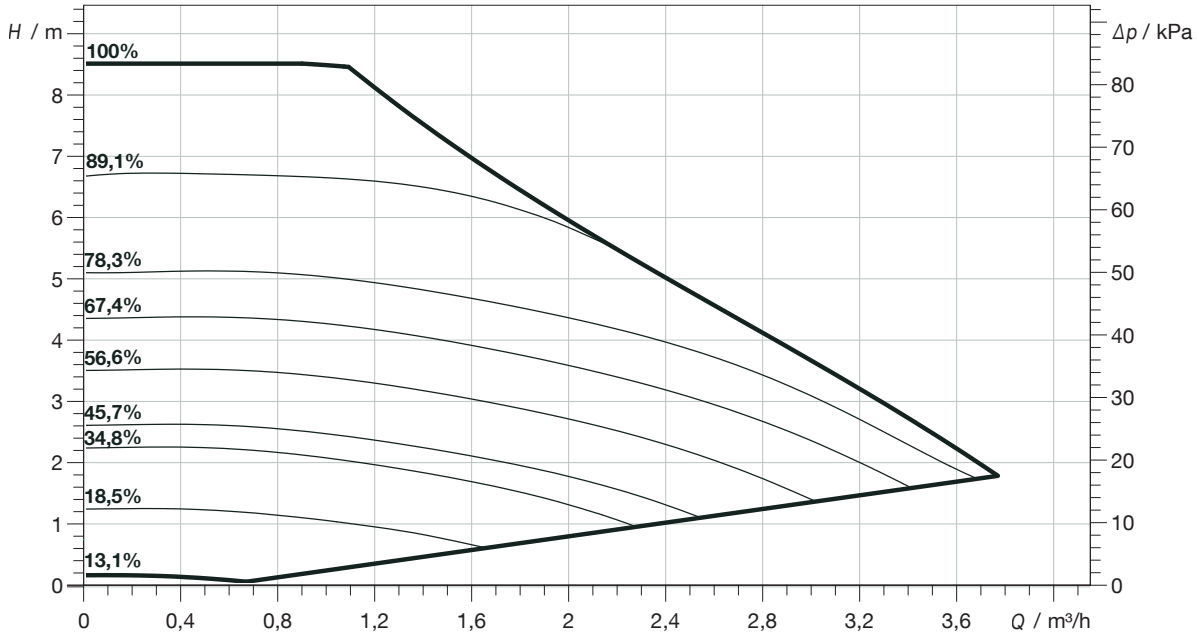

Fig. 39: Characteristic line for Wilo circulation pump (storage cylinder circuit)

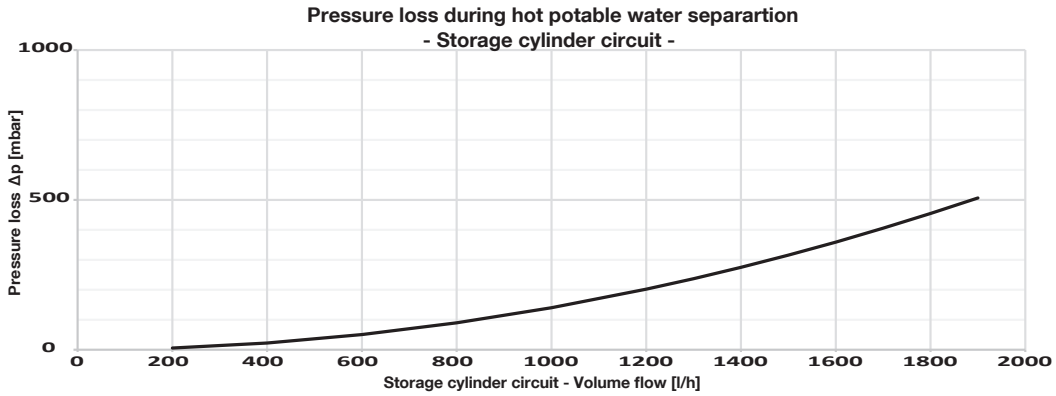

Fig. 40: Characteristic line - Pressure loss during hot potable water preparation (storage cylinder circuit)

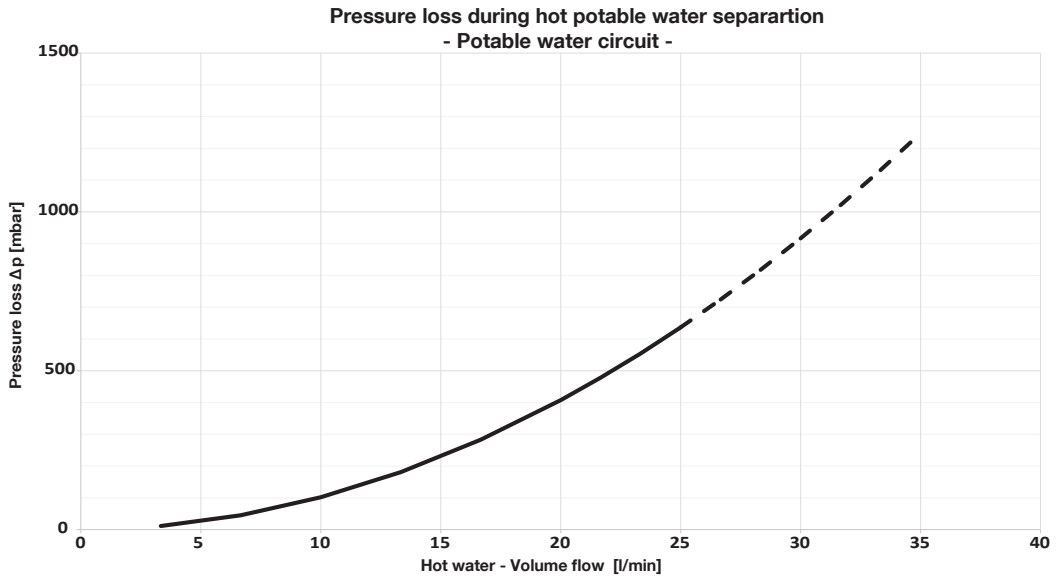

Fig. 41: Characteristic line - Pressure loss during hot potable water preparation (potable water circuit)

14.2 Characteristic line for hot potable water preparation

14.2.1 Heating of potable water from 10 °C to 45 °C

Performance data according to SPF test procedure.

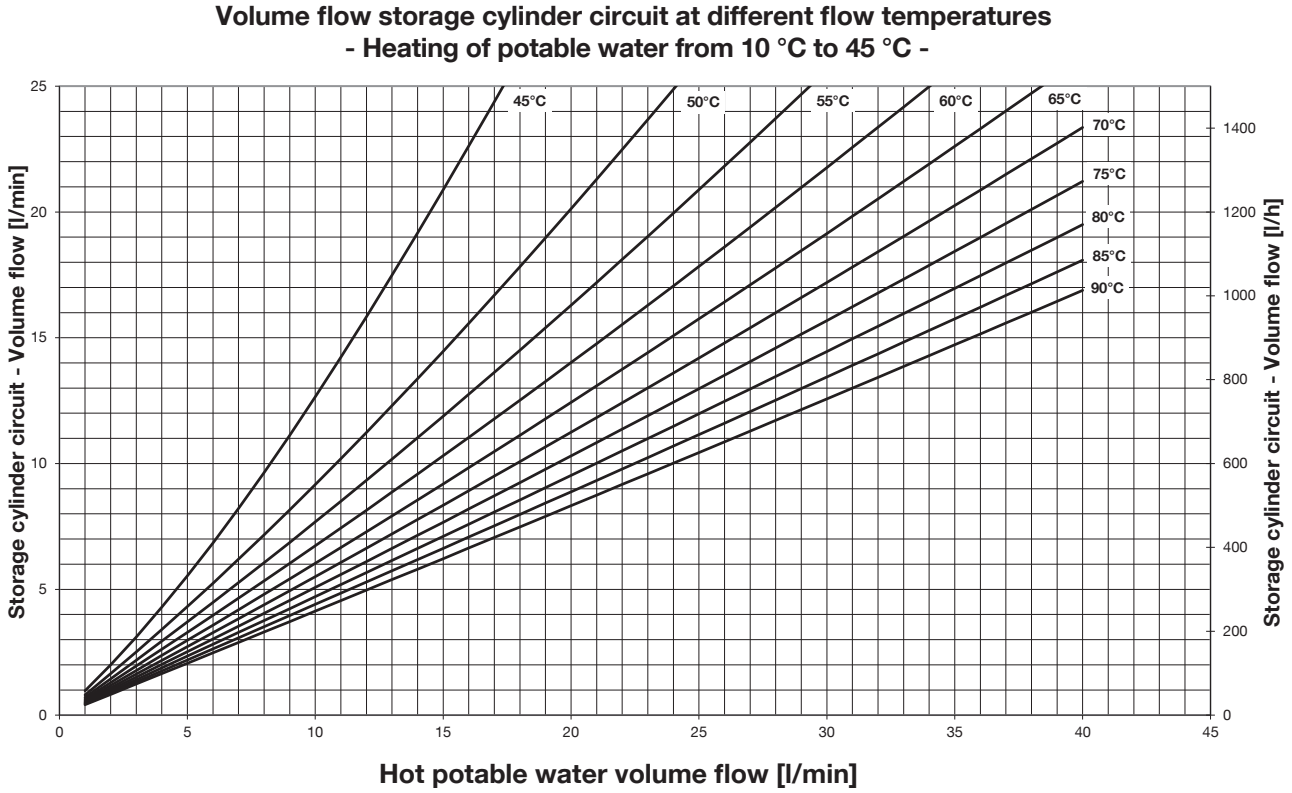

Fig. 42: Storage cylinder circuit volume flow - heating of potable water to 45 °C

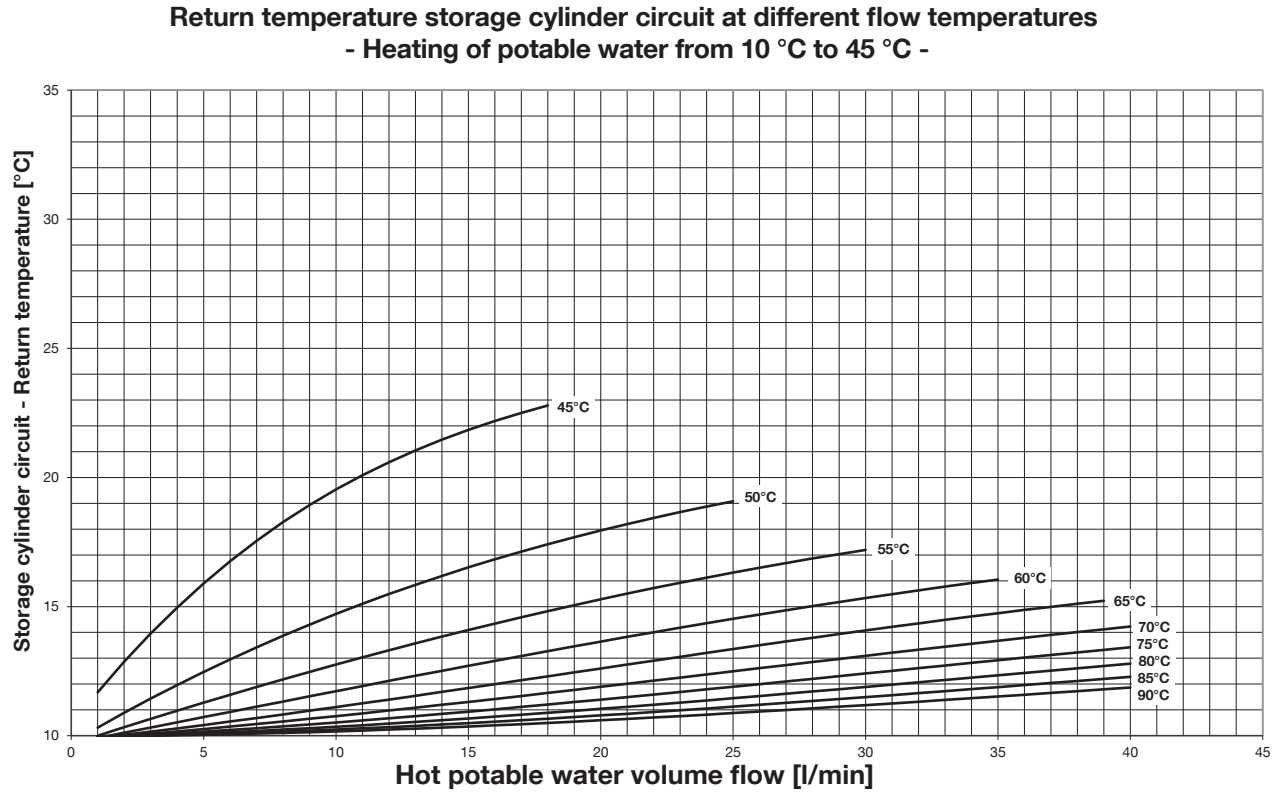

Fig. 43: Storage cylinder circuit return temperature - heating of potable water to 45 °C

14.2.2 Heating of potable water from 10 °C to 50 °C

Performance data according to SPF test procedure.

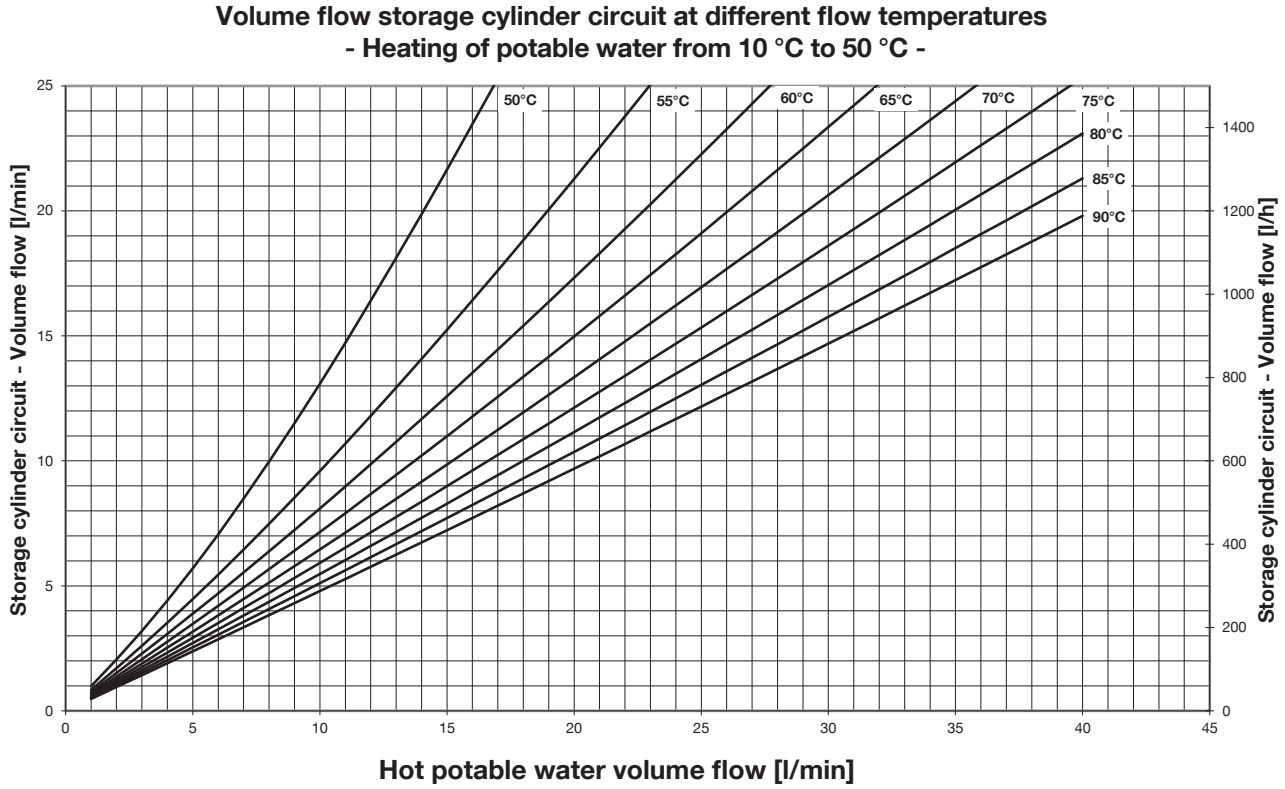

Fig. 44: Storage cylinder circuit volume flow - heating of potable water to 50 °C

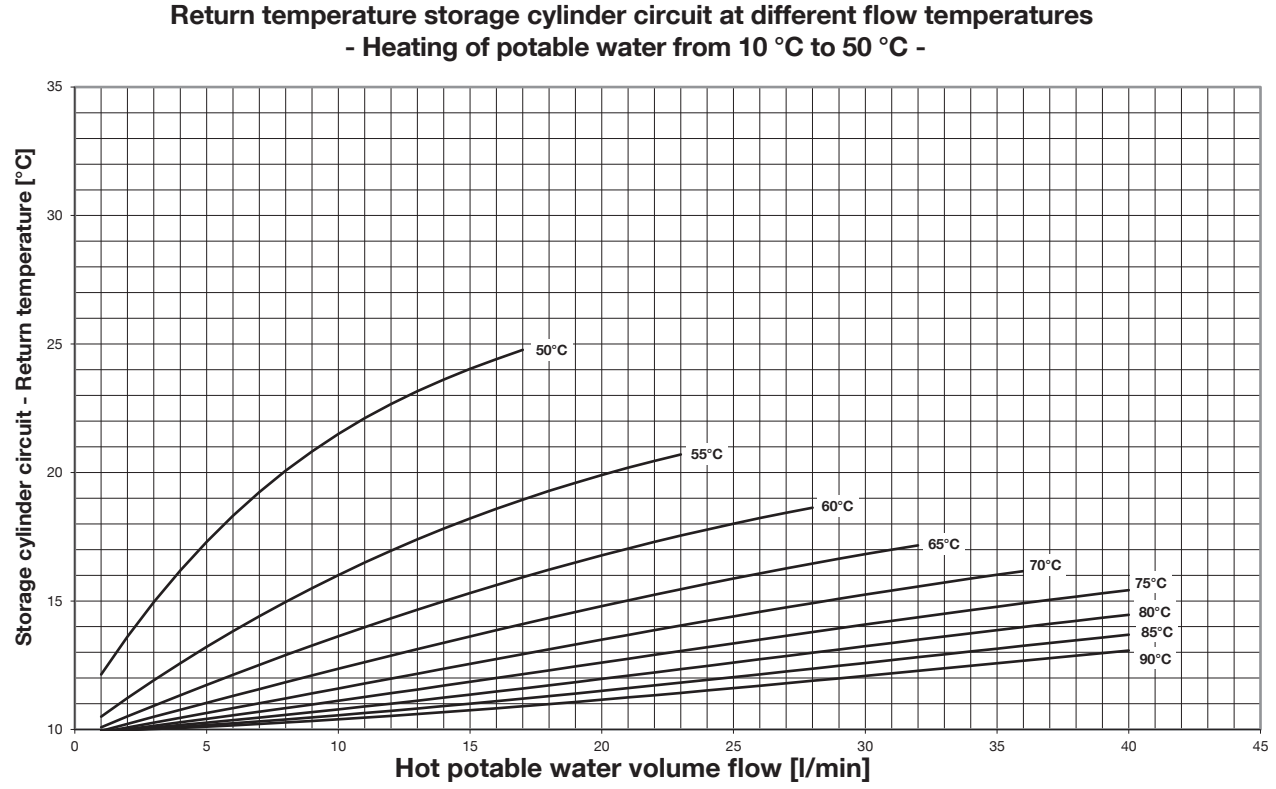

Fig. 45: Storage cylinder circuit return temperature - heating of potable water to 50 °C

14.2.3 Heating of potable water from 10 °C to 55 °C

Performance data according to SPF test procedure.

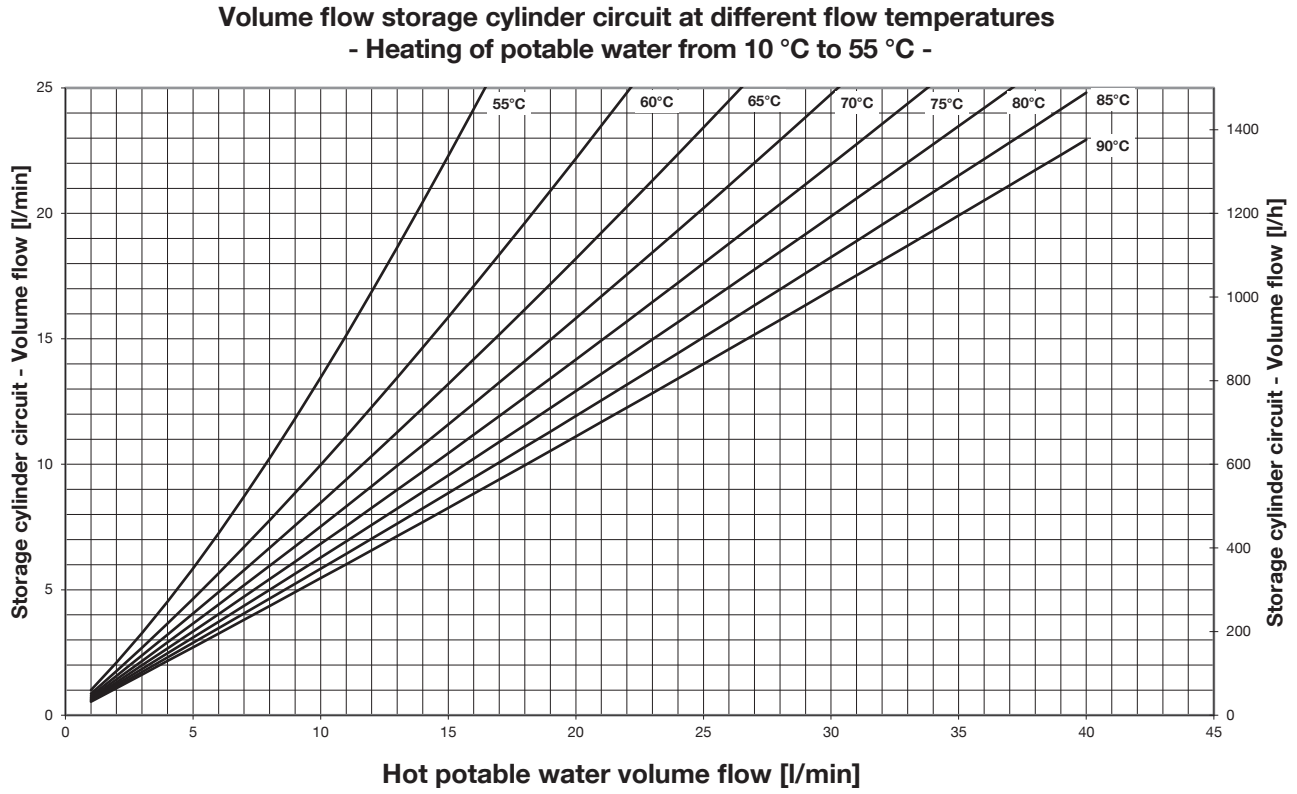

Fig. 46: Storage cylinder circuit volume flow - heating of potable water to 55 °C

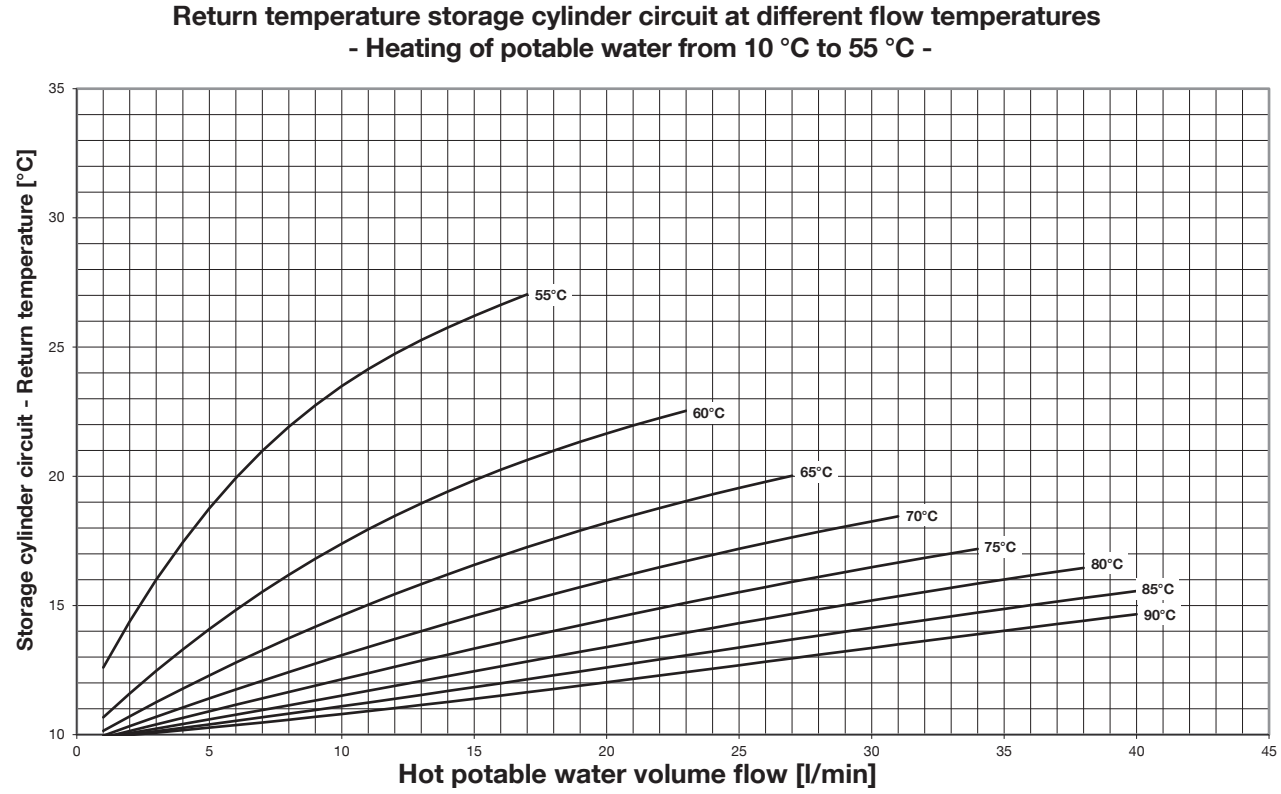

Fig. 47: Storage cylinder circuit return temperature - heating of potable water to 55 °C

14.2.4 Heating of potable water from 10 °C to 60 °C

Performance data according to SPF test procedure.

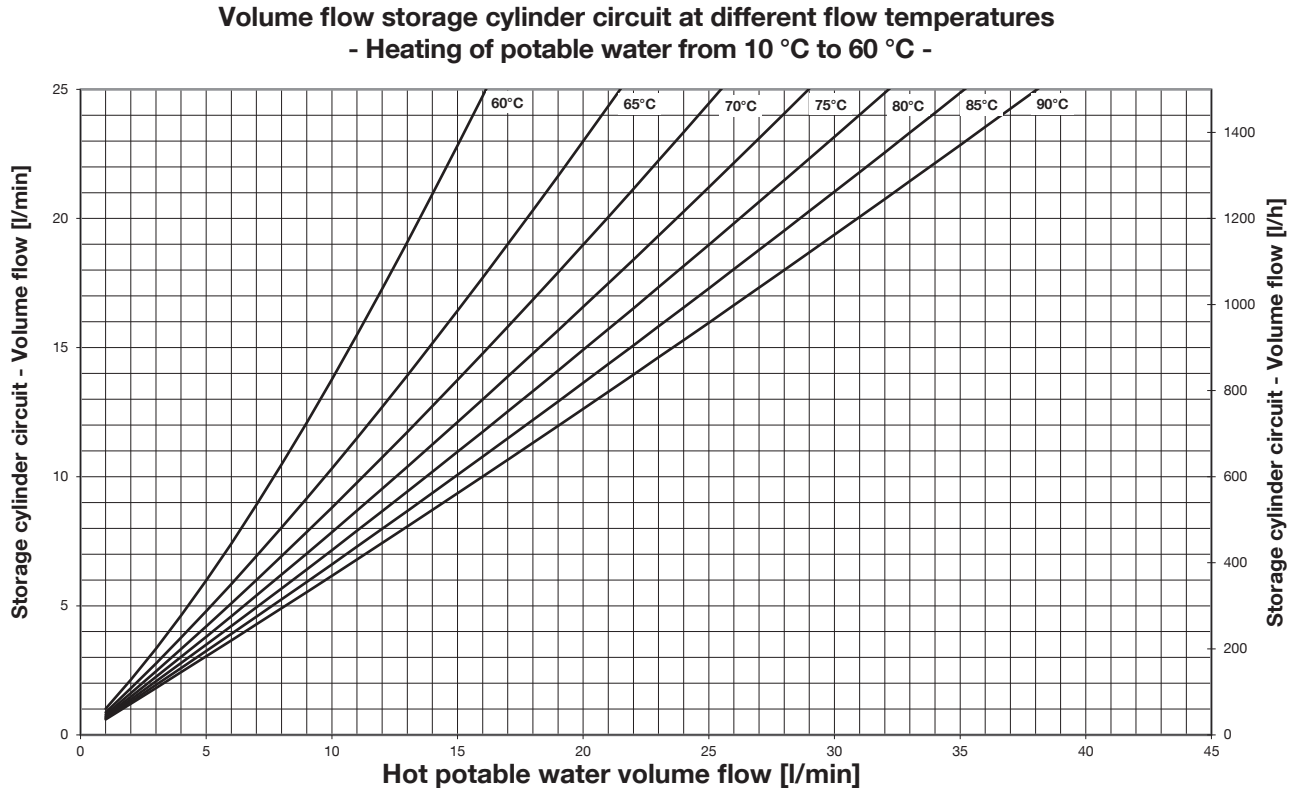

Fig. 48: Storage cylinder circuit volume flow - heating of potable water to 60 °C

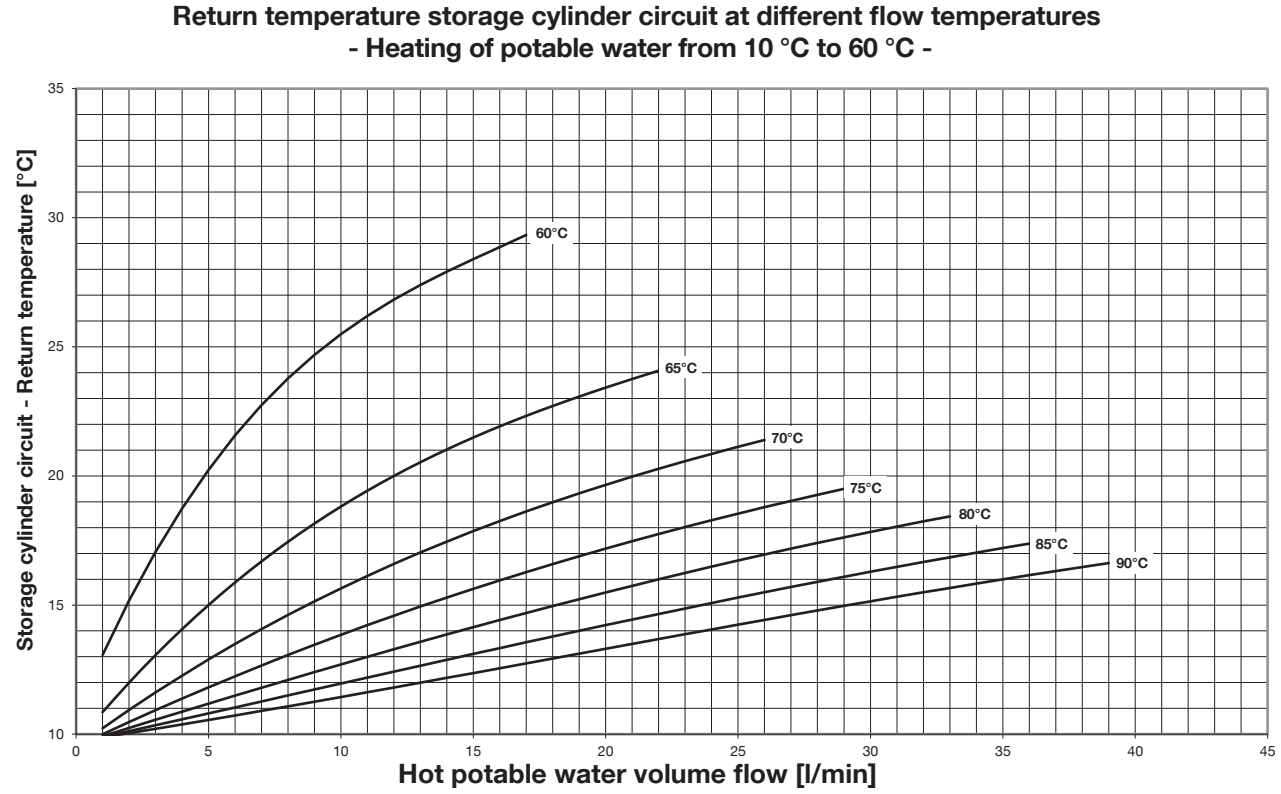

Fig. 49: Storage cylinder circuit return temperature - heating of potable water to 60 °C

14.2.5 Heating of potable water from 10 °C to 65 °C

Performance data according to SPF test procedure.

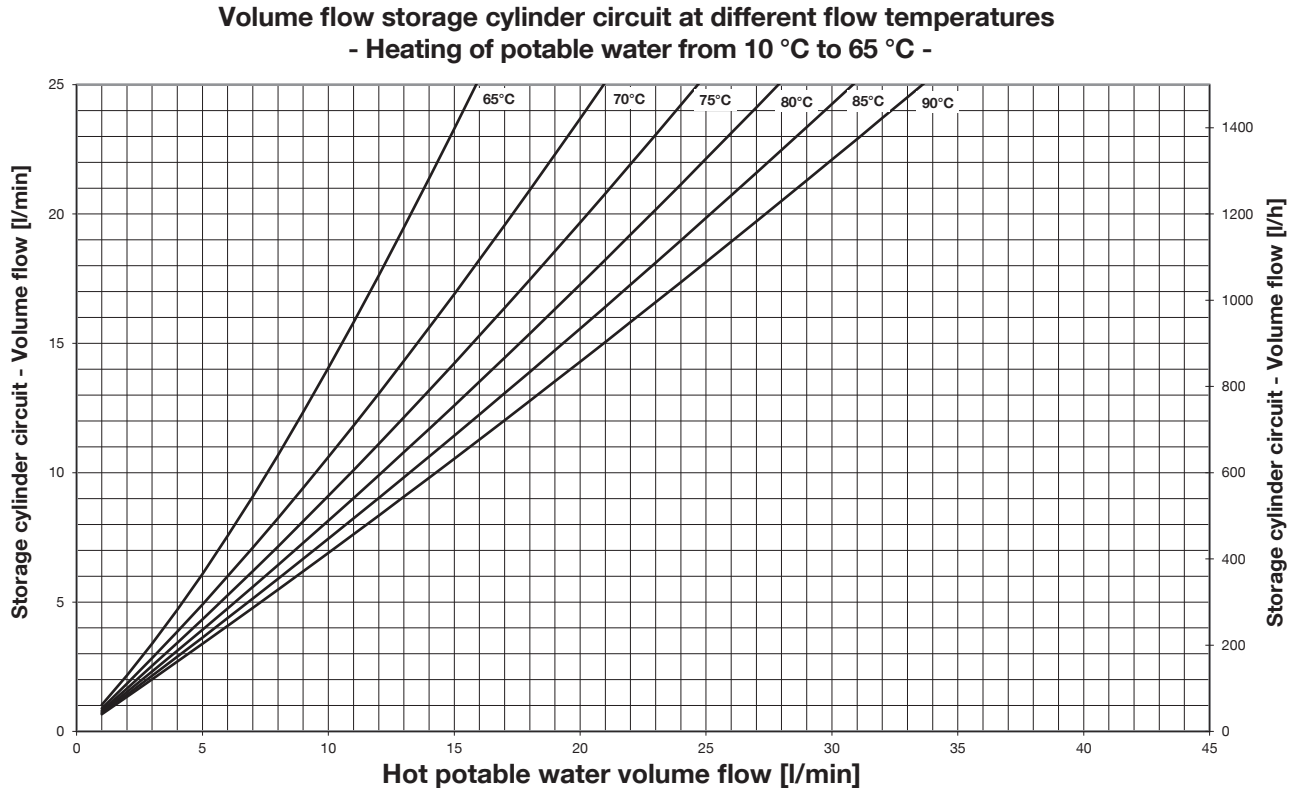

Fig. 50: Storage cylinder circuit volume flow - heating of potable water to 65 °C

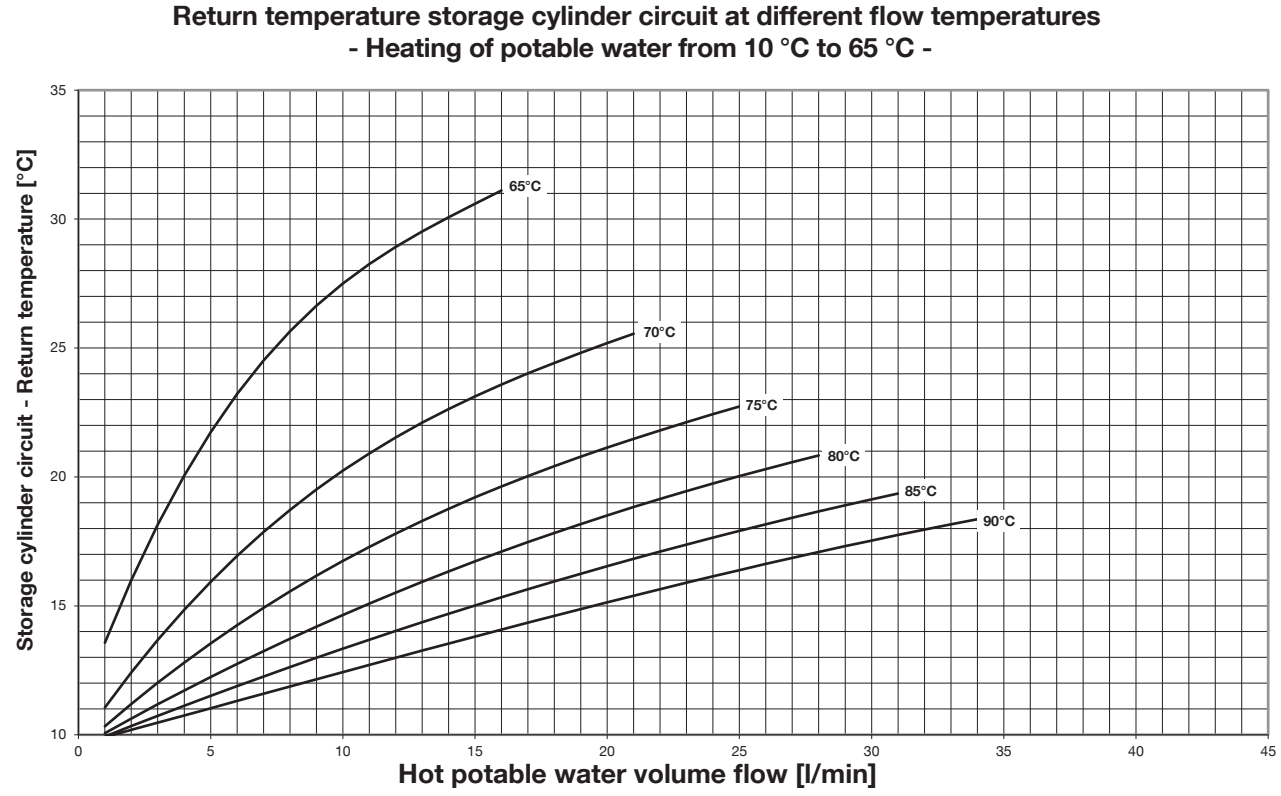

Fig. 51: Storage cylinder circuit return temperature - heating of potable water to 65 °C

14.2.6 Heating of potable water from 10 °C to 70 °C

Performance data according to SPF test procedure.

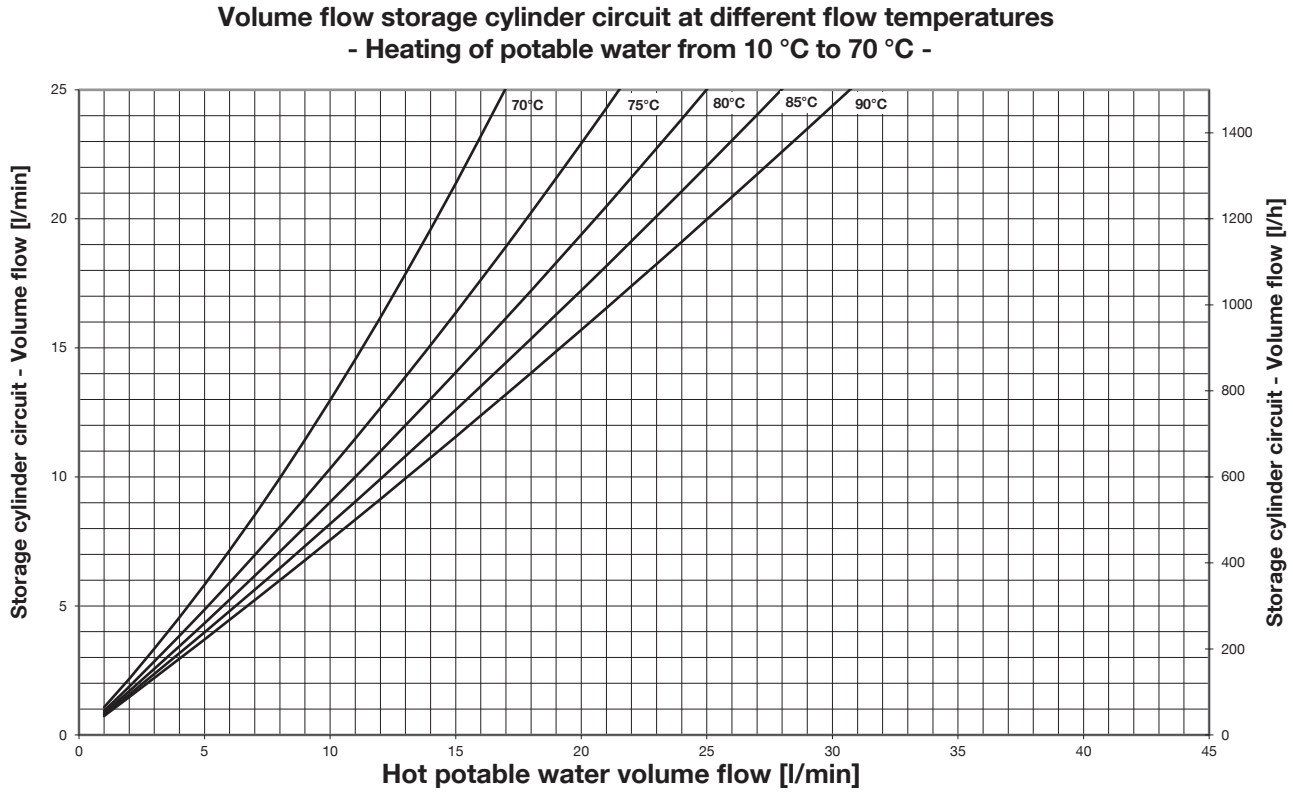

Fig. 52: Storage cylinder circuit volume flow - heating of potable water to 70 °C

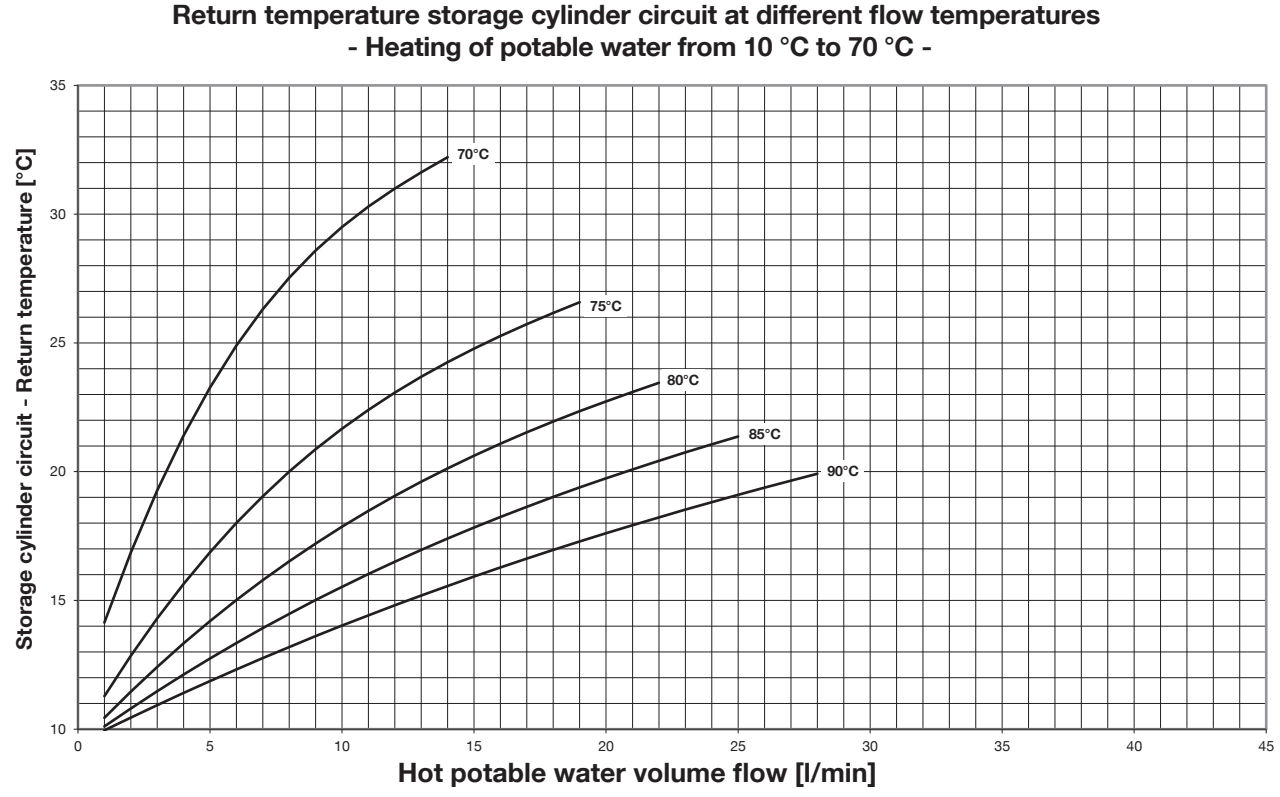

Fig. 53: Storage cylinder circuit return temperature - heating of potable water to 70 °C

14.2.7 Heating of potable water from 10 °C to 75 °C

Performance data according to SPF test procedure.

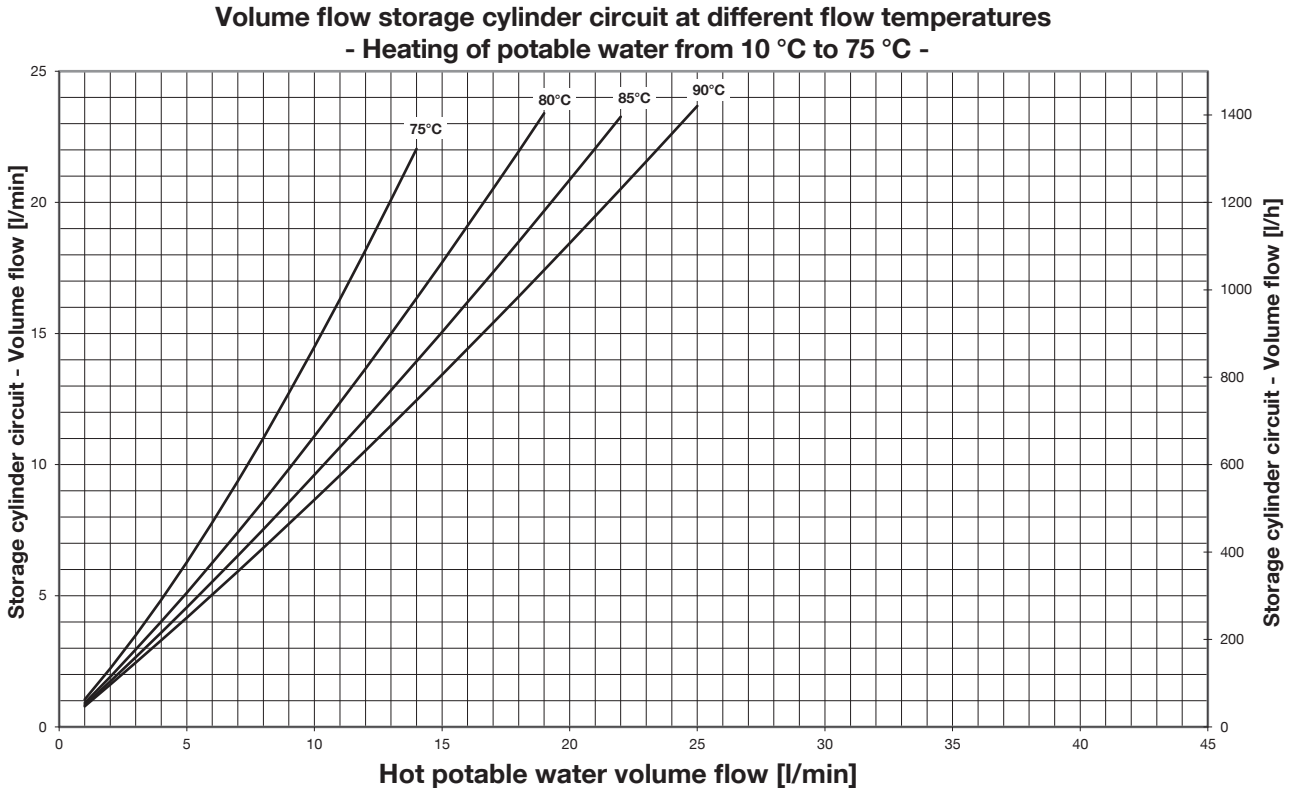

Fig. 54: Storage cylinder circuit volume flow - heating of potable water to 75 °C

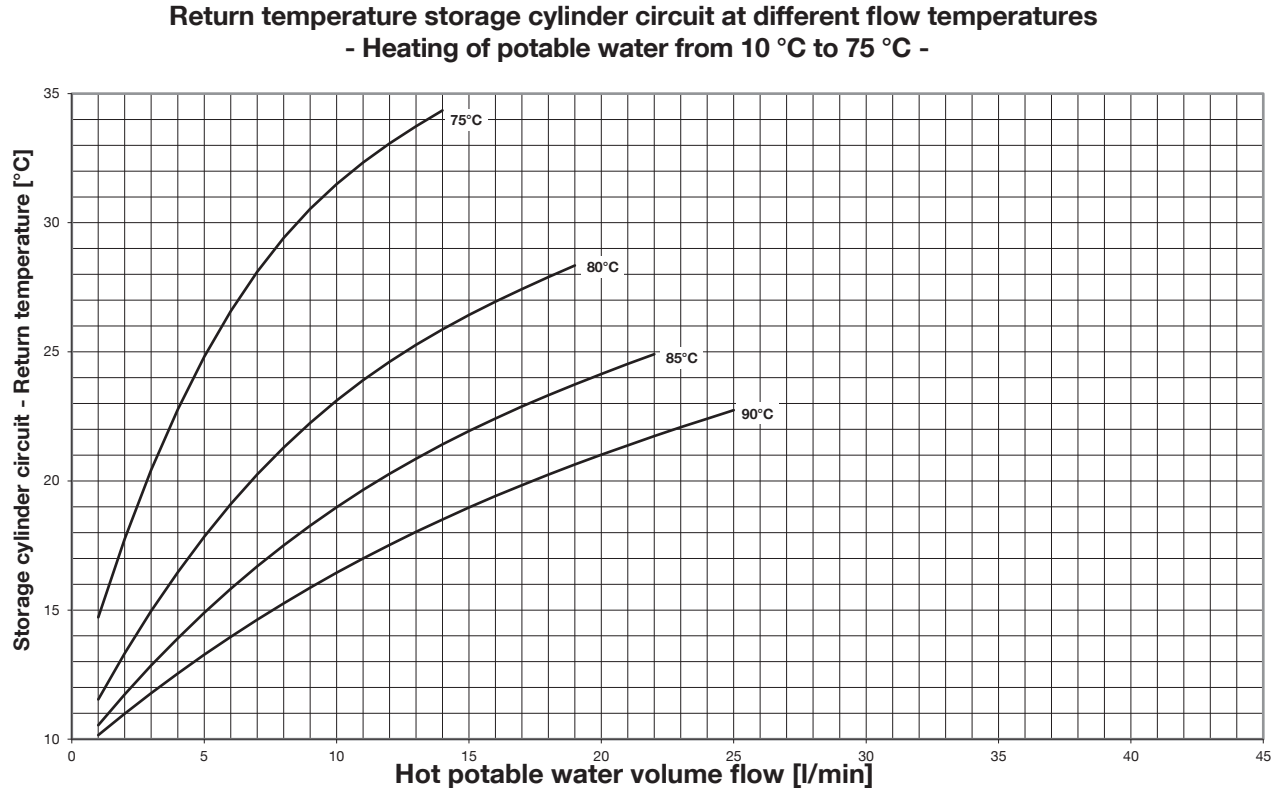

Fig. 55: Storage cylinder circuit return temperature - heating of potable water to 75 °C

15. EU Declaration of conformity

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EU Declaration of Conformity

Product identification:	Fresh water station "Regumaq X-25"
Manufacturer:	Oventrop GmbH & Co. KG
Adress:	Paul-Oventrop-Straße 1 59939 Olsberg GERMANY

This declaration of conformity is issued under sole responsibility of the manufaturer.

Object of the declaration:

Item no.	Type
1381125	copper brazed plate heat exchanger
1381127	fully sealed plate heat exchanger

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Machinery directive

DIRECTIVE **2006/42/EC** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006on machinery, and amending Directive 95/16/EC (recast)

The conformity of the product described above with the provisions of the applied Directive(s) is demonstrated by compliance with the following Standards/ regulations:

DIN EN ISO 12100:2010 + AC:2013

DIN EN 60204-1:2007 + A1:2009 + AC:2010

DIN EN 60670-1:2014

DIN EN 60730-1:2016

Electromagnetic Compatibility Directive

DIRECTIVE **2014/30/EU** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility

The conformity of the product described above with the provisions of the applied Directive(s) is demonstrated by compliance with the following Standards/ regulations:

EN 55014-1:2006 + A1:2009 + A2:2011

EN 55014-2:1997 + A1:2001 + A2:2008

EN 61000-3-2:2014

EN 61000-3-3:2013

DIN EN 60730-1:2016

RoHS

DIRECTIVE **2011/65/EU** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

Pressure Equipment directive

These articles fall under **Article 4(3)** of the Pressure Equipment Directive **2014/68/EU** and are designed and manufactured in accordance with good engineering practice.

59939 Olsberg, 24.05.2019
Signed for and behalf of:
Oventrop GmbH & Co. KG

i.V. .....
Michael Pehl
Head of serial development

i.V. .....
Dipl.-Ing. Thomas Droste
Group Leader Development

The materials used in the Oventrop fresh water and dwelling stations are selected and processed in accordance with strict quality specifications. The plate material used (stainless steel 1.4401) for the heat exchangers has proven itself over the long term in potable water applications. Nevertheless, **depending on the water quality, especially with high chloride concentrations > 100 mg/l** , it is possible that **leaks may form due to corrosion** on the heat exchangers.

It is therefore very important that the system designer and/or operator ensures that the fresh water and dwelling stations are only operated with **potable water** whose chemical composition does not have a **corrosive** effect on the components.

If necessary, coordinate with the local water supply company.

The following table contains limit values of potable water constituents when using heat exchangers with different **brazing materials** (copper, nickel or stainless steel).

Particular attention should be paid to the fact that there can be **interactions** between certain water constituents that can lead to special stresses on the material.

This includes, among other things, the combination of hydrogen carbonate with chloride and / or sulphate (see next page).

The selection of a suitable heat exchanger must therefore be made depending on the water quality. Corresponding analyses are provided by the local water supply company.

Water quality requirements

		Stainless steel heat exchanger brazed with:		
CONSTITUENTS	CONCENTRATION (mg/l or ppm)	COPPER	NICKEL / STAINLESS STEEL	COPPER with protective layer
⚠ Chlorides (Cl^-) at 60 °C See chart on next page!	< 100 100 - 150 > 150	+ - -	+ - -	+ + 0
Hydrogen carbonate (HCO_3^-)	< 70 70 - 300 > 300	0 + 0	+ + +	+ + +
Sulphate (SO_4^{2-})	< 70 > 70	+ -	+ +	+ +
HCO_3^- / SO_4^{2-}	> 1.0 < 1.0	+ -	+ +	+ +
Electrical conductivity at 20°C	< 50 µS/cm 50 - 500 µS/cm > 500 µS/cm	0 + 0	+ + +	+ + +
pH In general, a low pH value (below 6) increases the risk of corrosion and a high pH value (above 7.5) reduces the risk of corrosion.	< 6.0 6.0 - 7.5 7.5 - 9.0 9.0 - 9.5 >9.5	0 0 + 0 0	0 + + + +	+ + + + 0
Free chlorine (Cl_2)	< 1 > 1	+ -	+ -	+ 0
Ammonium (NH_4^+)	< 2 2 - 20 > 20	+ 0 -	+ + +	+ + -
Hydrogen sulphide (H_2S)	< 0.05 > 0.05	+ -	+ +	+ 0
Free (aggressive) carbon dioxide (CO_2)	< 5 5 - 20 > 20	+ 0 -	+ + +	+ + +
Nitrate (NO_3^-)	< 100 > 100	+ 0	+ +	+ +
EXPLANATIONS:	+ Good resistance under normal conditions 0 Corrosion may occur - Use not recommended			

The chemical composition of potable water can be subject to temporal fluctuations.

Special notes for corrosion protection

NOTICE

High media temperatures (>60 °C) increase the risk of corrosion!

! Do not set the hot water temperature and the flow temperature of the heating water higher than necessary.

NOTICE

Long stagnation periods increase the risk of corrosion!

! Flush the system manually or automatically on a regular basis if longer stagnation periods are to be expected all the time (VDI/DVGW 6023).

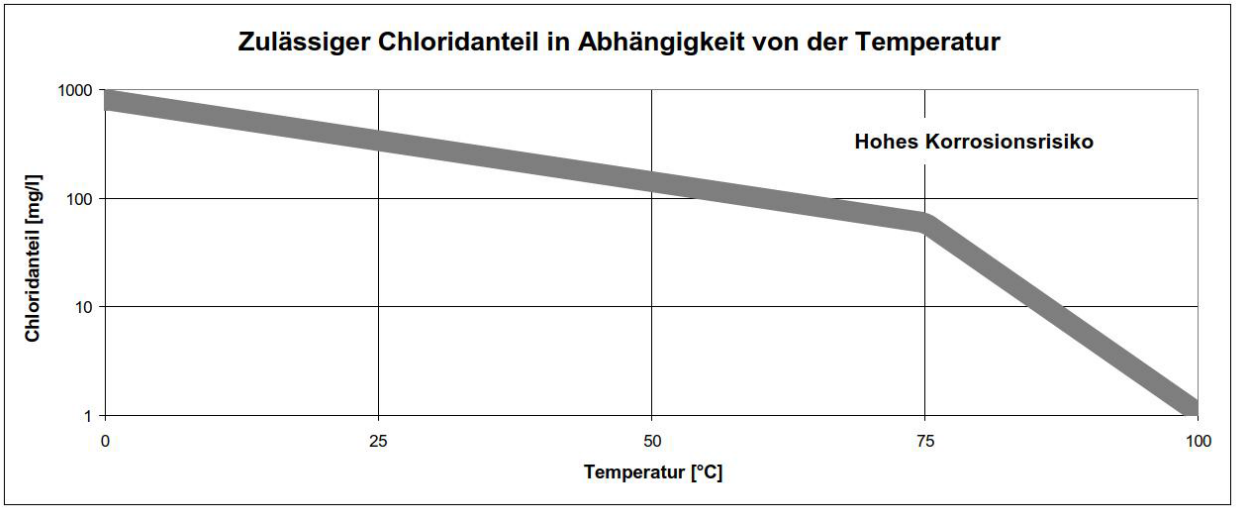
- Caution is always advised with the combination of hydrogen carbonate and chloride. **Low hydrogen carbonate contents combined with high chloride contents increase the risk of corrosion.**
- Caution is advised with the combination of hydrogen carbonate and sulphate**. For copper brazed heat exchangers, the hydrogen carbonate content in the water must not be lower than the sulphate content.** If this is the case, a nickel brazed, stainless steel brazed heat exchanger or a heat exchanger with protective layer must be used.

If the water constituents are not within the specified limits, a **water treatment system** must be installed if necessary.

NOTICE

An incorrectly operated water treatment system can increase the risk of corrosion!

- **In mixed installations, the "flow rule" must be observed when using copper brazed heat exchangers in conjunction with galvanised steel pipes.** You can find more information on this in the DIN EN 12502 standard.
- **Flush** all supply pipes **before** mounting the station **(DIN EN 806-4)**, to remove any dirt particles and residues from the system.
- When **maintaining** the station, take into account that **cleaning agents can also promote corrosion of the** heat exchanger. In this context, observe the DVGW specifications, such as DVGW Codes of Practice W291 and W319.
- When using a copper brazed heat exchanger without protective layer, the electrical conductivity of the water may range between 50 and 500 µS/cm. Take this into account, among other things, during water treatment in accordance with VDI2035.



NOTICE

Corrosion and stone formation in the system!

! It is the responsibility of the system designer and system operator to take into account water constituents and factors that influence the corrosion and stone formation of the system and to evaluate them for the specific application. In critical water supply areas, coordination should therefore take place in advance with the local water supply company.

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Fresh water station Regumaq X-25
Handover report

Date:	
Installation location address / building	
Address operator	
Address installation company	
Serial number Regumaq X-25	

	Give reasons for items that have not been carried out or for items that have been answered with No in the Remarks field!	Tick as appropriate or enter value/number		Remarks / Settings
		Yes	No	
Installation of potable water station				
1	Number of installed stations			
2	Number of stations with circulation			
3	Designation of the circulation pump(s) if you do not use the Oventrop circulation set			
4	When installing several stations			
4.1	Has the piping been carried out according to Tichelmann?	☐	☐	
4.2	Have check valves been installed in the potable water supply pipe (PWC)?	☐	☐	
5	Has an additional safety valve of sufficient dimension been installed in the potable water circuit?	☐	☐	
6	System pressure on the potable water side		**bar**	
7	Has an expansion tank been installed in the potable water circuit?	☐	☐	
8	System pressure on the storage cylinder side		**bar**	
9	Has the storage cylinder side been vented?	☐	☐	
10	Has/have the air vent(s) been checked for function?	☐	☐	
11	Capacity, type and version of the heat generator		**kW**	
12	Storage cylinder volume		**l**	
13	Has/have the station(s) been hydraulically decoupled?	☐	☐	
14	When using Oventrop storage cylinders. Has/have the station(s) been connected according to specifications?	☐	☐	
15	Has an expansion tank of sufficient dimension been installed in the storage cylinder circuit?	☐	☐	
16	Which setpoint temperature for the storage cylinder has been set at the heat generator?		**75 °C,**	
17	Are all ball valves open?	☐	☐	

Give reasons for items that have not been carried out or for items that have been answered with No in the Remarks field!		Tick as appropriate or enter value/number		Remarks / Settings
		Yes	No	
Controller settings				
1	Which potable water temperature has been set?	75 °C,		
2	Has the circulation been activated (see controller operating instructions, paragraph Circulation)?	☐	☐	
2.1	Which mode has been activated?			
3	Does the LED on the controller light up / flash green?	☐	☐	
4	Have any other modifications been made to the settings of the controller?	☐	☐	

Give reasons for items that have not been carried out or for items that have been answered with No in the Remarks field!		Tick as appropriate or enter value/number		Remarks / Settings
		Yes	No	
Final inspection				
1	Has the installation been tested for leaks (potable water DIN EN 806-4 heating DIN EN 14336)?	☐	☐	
2	Has commissioning been carried out in accordance with the operating instructions?	☐	☐	

Instruction/Handover	
The installer has instructed the operator in the function and intended use of the fresh water station.	☐
The installer has advised the operator of the intended operation of potable water installations.	☐
The installer has handed over the necessary documents to the operator.	☐

Information on the intended operation of potable water installations:

- Stagnation must be avoided, regular potable water exchange must be ensured
- TPWH >= 60 °C must be maintained at the hot water outlet
- The circulation system must be designed in such a way that the potable water temperature does not fall below the station outlet temperature of >= 60 °C by more than 5 K
- TPWC must be maintained at < 25 °C

at the cold water outlet

Installer / Installation company

_____

Date / Signature / Stamp

Operator

Handover report received

_____

Date / Signature

oventrop

Fresh water station Regumaq X-25
Maintenance report

Date:	
Installation location address / building	
Address operator	
Address installation company	
Serial number Regumaq X-25	

Give reasons for items that have not been carried out or for items that have been answered with No in the Remarks field!		Tick as appropriate or enter value/number		Remarks / Settings
		Yes	No	
System information				
1	Number of installed stations			
2	Number of stations with circulation			
3	Designation of the circulation pump(s) if you do not use the Oventrop circulation set			
4	System pressure on the potable water side		**bar**	
5	System pressure on the storage cylinder side (Carry out a **check with the handover report.** In case of deviations, please note the troubleshooting table!)		**bar**	
6	Capacity, type and version of the heat generator		**kW**	
7	Storage cylinder volume		**l**	
8	Which setpoint temperature for the storage cylinder has been set at the heat generator?		**75 °C,**	

Give reasons for items that have not been carried out or for items that have been answered with No in the Remarks field!		Tick as appropriate or enter value/number		Remarks / Settings
		Yes	No	
Maintenance work				
1	Has the station been tested for leaks (visual inspection)?	☐	☐	
2	Have the electrical components been checked for firm seating and integrity?	☐	☐	
3	Has a functional test of the safety valve been carried out (DIN EN 806-5)?	☐	☐	
4	Has a functional test of the check valve in the circulation pipe been carried out (DIN EN 806-5)?	☐	☐	
5	Has the potable water circuit been sampled for microbiological testing (TrinkWV (German Decree for Potable Water) 2012)?	☐	☐	

6	Has the heat exchanger been checked for external leaks?	☐	☐	
7	Has a functional test been carried out to verify performance (see operating instructions for functional control)?	☐	☐	
8	Have all ball valves been checked for free movement?	☐	☐	
9	Have any strainers installed on site been cleaned?	☐	☐	
10	Are all shutoff fittings open?	☐	☐	
11	Has the storage cylinder side been vented and the air vents been checked for opening and function?	☐	☐	
12	Have the controller settings been compared with the specifications in the handover report (if necessary, document changes in remarks)?	☐	☐	

Maintenance work				
1	Which potable water temperature has been entered?		75 °C,	
2	Has the circulation been activated?	☐	☐	
2.1	Which mode has been activated?			
3	Does the LED on the controller light up / flash green?	☐	☐	
4	Have any other modifications been made to the settings of the controller?	☐	☐	

Repair work (only fill in in case of repair or replacement of components)				
1	Which component has been replaced?			
1.1	Reason for replacement			
2	Which component has been replaced?			
2.1	Reason for replacement			
3	Which component has been replaced?			
3.1	Reason for replacement			
4	After repair work, has commissioning been carried out in accordance with the operating instructions?	☐	☐	

Instruction/Handover	
The installer has informed the operator about the maintenance work carried out.	☐
The installer has informed the operator about possible modifications and repair work.	☐
The installer has handed over the necessary documents to the operator.	☐

Information on the intended operation of potable water installations:

- Stagnation must be avoided, regular potable water exchange must be ensured
- TPWH >= 60 °C must be maintained at the hot water outlet
- The circulation system must be designed in such a way that the potable water temperature does not fall below the station outlet temperature of >= 60 °C by more than 5 K
- TPWC must be maintained at < 25 °C

at the cold water outlet

Installer / Installation company

_____

Date / Signature / Stamp

Operator

Maintenance report received

_____

Date / Signature

10000083148 10227810 001 02

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Wir regeln das. Seit 1851.

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