oventrop

Valves, controls + systems

EN

Fresh water station “Regumaq X-80”

Installation instructions

The SEPARATE operating instructions of the controller must be observed!

Installation, commissioning and maintenance must only be carried out by a **qualified tradesman**!

Read installation instructions **in their entirety** before installation of the fresh water station and observe **safety notes**!

The instructions of all system components (such as accessories) must also be observed!

Hand all installation and operating instructions **over to the user of the system**!

The qualified tradesman has to **inform** the user of the system as to the function and operation of the product!

The installation instructions have to be kept for later reference!

The advice regarding **corrosion protection** (see appendix) must be observed!

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1. General information

1.1 Extent of supply and contact

Thank you for purchasing the Oventrop fresh water station. Please check the delivery for any damages caused during transit and for completeness. It consists of the following components:

- Product assembly with controller “Regtronic RQ”
- Fixing material
- Angled wall bracket
- 4 x ring gaskets
- 3 x instructions (installation instructions for the fresh water station, installation and operating instructions for the controller, instruction for the Grundfos pump)

Contact address

OVENTROP GmbH & Co. KG
Paul-Oventrop-Straße 1
59939 Olsberg
Germany

Technical service

Phone: +49 2962 82 234 (Mo.-Fr. 7:30-16:30 h)

1.2 Copyright and protective rights

These installation and operating instructions are copyrighted and are exclusively designed for persons involved with the product. Passing these installation instructions on to third parties is not permitted.

1.3 General conditions of sales and delivery

Oventrops general conditions of sales and delivery valid at the time of supply are applicable.

1.4 Storage and transport

The product must only be stored under the following conditions:

- Storage temperature: 0 °C up to 40 °C
- Do not store in open air, keep dry and free from dust.
- Do not expose to aggressive fluids or heat sources. Protect from direct sunlight.
- Protect from mechanical agitation during transport.
- Packaging material is to be disposed of in an environmentally friendly manner.

1.5 Note regarding installation instructions

Observance of this document will help to avoid dangers and to increase reliability of the product. It has to be read, understood and applied by any person working on the fresh water station and using it.

The chapter “Safety notes” as well as the warning notes in the other chapters of these installation instructions are to be observed.

Oventrop GmbH & Co. KG will not accept liability for damages and malfunctions caused by the non-observance of these installation instructions and the installation and operating instructions for the controller. The illustrations and specifications in these installation and operating instructions are subject to technical modifications.

1.5.1 Used symbols and pictograms

The following symbols and pictograms are used in these installation instructions:

Warning symbol for possible injuries to persons

Danger from electric voltage

Disconnect the power supply before starting work

Risk of scalding due to hot liquids

Danger from pressurized components

Danger from hot surface

Danger from heavy product assembly

Mandatory sign

Prohibition sign

Wear safety goggles

Wear safety shoes

Wear safety gloves

Note, information, recommendation

1.6 Note regarding declaration of conformity

Oventrop GmbH & Co. KG hereby declares that the fresh water station “Regumaq X-80” complies with the basic requirements and the other relevant provisions of the relevant EC Directives.

The declaration of conformity can be obtained from the manufacturer.

2. Safety notes

2.1 Normative directives

The valid standards, approved rules of technology and local regulations must always be observed during installation, operation, maintenance and repair of the flushing station. Amongst others, the following standards, decrees and guidelines must be observed:

TrinkwV – V (German Potable Water Ordinance) Ordinance on the quality of water intended for human consumption

DIN EN 806 (Teil 1-5) – Specifications for installations inside buildings conveying water for human consumption

DIN 1988 (parts 100, 200, 300) – Codes of practice for drinking water installations

VDI / DVGW 6023 - Hygiene in drinking water installations

DIN EN 1717 – Protection against pollution of potable water installations

DVGW W 551 – Drinking water heating and drinking water piping systems:
Technical measures to reduce legionella growth

DIN 4708 – Central heat-water-installations

DIN 4753 – Water heaters and hot water preparation systems for potable and process water

DIN EN 12502 – Protection of metallic materials against corrosion

DIN EN 12828 – Heating systems in buildings

VDI 2035 – Prevention of damage in water heating installations

2.2 Correct use

The design intent of the fresh water station “Regumaq X-80” is an electronically controlled product assembly with heat exchanger for hot potable water preparation for a single or multiple draw off points in a building complex or in the commercial sector. The station works according to the “system separation” principle, i.e. the heat energy from a storage cylinder circuit is transferred to a potable water circuit in an indirect way. The heat energy (max. 95 °C) shall only be supplied by a buffer storage cylinder. The parallel operation of several “Regumaq X-80” stations is permissible.

Any use of the fresh water station outside the above applications will be considered as misuse. This applies in particular to the conveyance of fluids other than heating water in the storage cylinder circuit and other than potable water in the potable water circuit. A direct connection of the fresh water station to a local or district heating network is inadmissible. The parallel operation with other heating system components, such as stations for the supply of heating circuits is inadmissible.

The manufacturer will not accept liability for any damages resulting from incorrect us of the station.

The product must only be used in a technically perfect condition, according to its intended use, in awareness of safety and risks and in compliance with these installation instructions.

2.2.1 Modifications to the product

Modifications to the fresh water station are not allowed.

2.3 Definition of the warning notices

These installation instructions show **warnings** which are displayed by **symbols**. The symbols are linked to **signal words** which define the **seriousness of the danger** which arises from a situation. The warnings are to be observed to avoid injuries to persons and damage to property.

WARNING

Warning symbol and signal are indicating a dangerous situation with moderate risk which may lead to death or serious injury if not avoided.

CAUTION

Warning symbol and signal are indicating a dangerous situation with low risk which may lead to minor or moderate injury or damage to property if not avoided.

NOTICE

Signal word (without warning symbol) indicating a possible damage to property

2.4 Residual dangers

Even though this product is manufactured in accordance with the latest technical status and is fail-safe, there might still be a **residual danger** for persons and property. Therefore, the following safety notes must be observed:

WARNING

Danger to life due to electric shock!

- Disconnect the power supply before starting the following work: Installation, repair, removal.
- Installation must only be carried out in dry indoor areas.
- The controller must only be opened by a **qualified electrician**. **The controller must only be opened when using accessory components.**

Danger from pressurised components!

- Before starting work, make sure that the installation is depressurised.
- The permissible operating pressures must be observed during operation.
- A **safety valve without isolating facility** has to be installed in the potable water heating installation (mandatory according to DIN EN 806-2).

Risk of scalding due to an uncontrolled escape of hot fluids!

- Before starting work, drain the storage cylinder/potable water circuit or isolate the supply pipes.
- Before starting work, let the installation cool down.
- Once installation is complete, carry out a leakage test.
- Cover the vent hole with a cloth if required.
- Wear safety goggles if required.

Risk of scalding due to defective mixing taps at the draw off points!

- Defective mixing taps must be replaced immediately.

Risk of scalding at the draw off points during thermal disinfection!

- Thermal disinfection should be carried out overnight if possible.
- Take preventive measures against scalding at the draw off points during thermal disinfection and up to one hour afterwards.
- After having completed thermal disinfection, the potable water installation must be returned to normal operation.

Danger from development of legionella!

- The potable water temperature in the cold water riser must not exceed **25 °C**.
- The potable water temperature in the hot water riser must not drop below **55°C**.
- The water of the potable water installation has to be exchanged completely **at least once every 72 hours**.

CAUTION

Risk of burns due to hot components and surfaces!

- Avoid unprotected contact with hot system components.
- Let the installation cool down.

Risk of injury from heavy station!

- Wear safety shoes during installation.
- Installation must be carried out with the help of a second person.

2.5 Personnel qualification

Due to professional training, knowledge and experience as well as knowledge of the relevant standards and regulations, the **qualified electrician** is in a position to carry out any work at **electrical installations and connections** and to recognize possible dangers.

Due to professional training, knowledge and experience as well as the knowledge of the relevant standards and regulations, the **heating, gas and water specialist** is in a position to carry out any work at **heating and potable water installations** and to recognize possible dangers.

3. Technical description

3.1 Construction

1 *Controller “Regtronic RQ”*
1b *Memory card*
2 *Controller insertion block*
3 *Heat exchanger*
4 *Angled wall bracket*
5 *Base plate*
6 *Flow sensor (potable water circuit),* ***VTH 25***
7 *Temperature sensor (PWC/circulation),* ***S 4***
8 *Flushing, filling and draining connection with ball valve (PWC)*
9 *Circulation pipe connection*
10 *Safety valve potable water circuit (10 bar)*
11 *Water sampling valve connection (4x)*
12 *Isolating ball valve potable water cold (PWC)*
13 *Isolating ball valve potable water hot (PWH)*
14 *Flushing, filling and draining connection with ball valve (PWH)*
15 *Temperature sensor (PWH),* ***S 2***
16 *Isolating ball valve supply (storage cylinder circuit)*
17 *Throttling valve,* ***R 1****, with temperature sensor (storage cylinder circuit),* ***S 1***
18 *Pump (storage cylinder circuit),* ***R 4*** *(tension),* ***PWM 1*** *(signal)*
19 *Flushing, filling and draining connection with ball valve (storage cylinder circuit supply)*
20 *Flushing, filling and draining connection with ball valve (storage cylinder circuit return)*
21 *Isolating ball valve return (storage cylinder circuit)*
22 *Thermal insulation (front/rear insulation shell)*

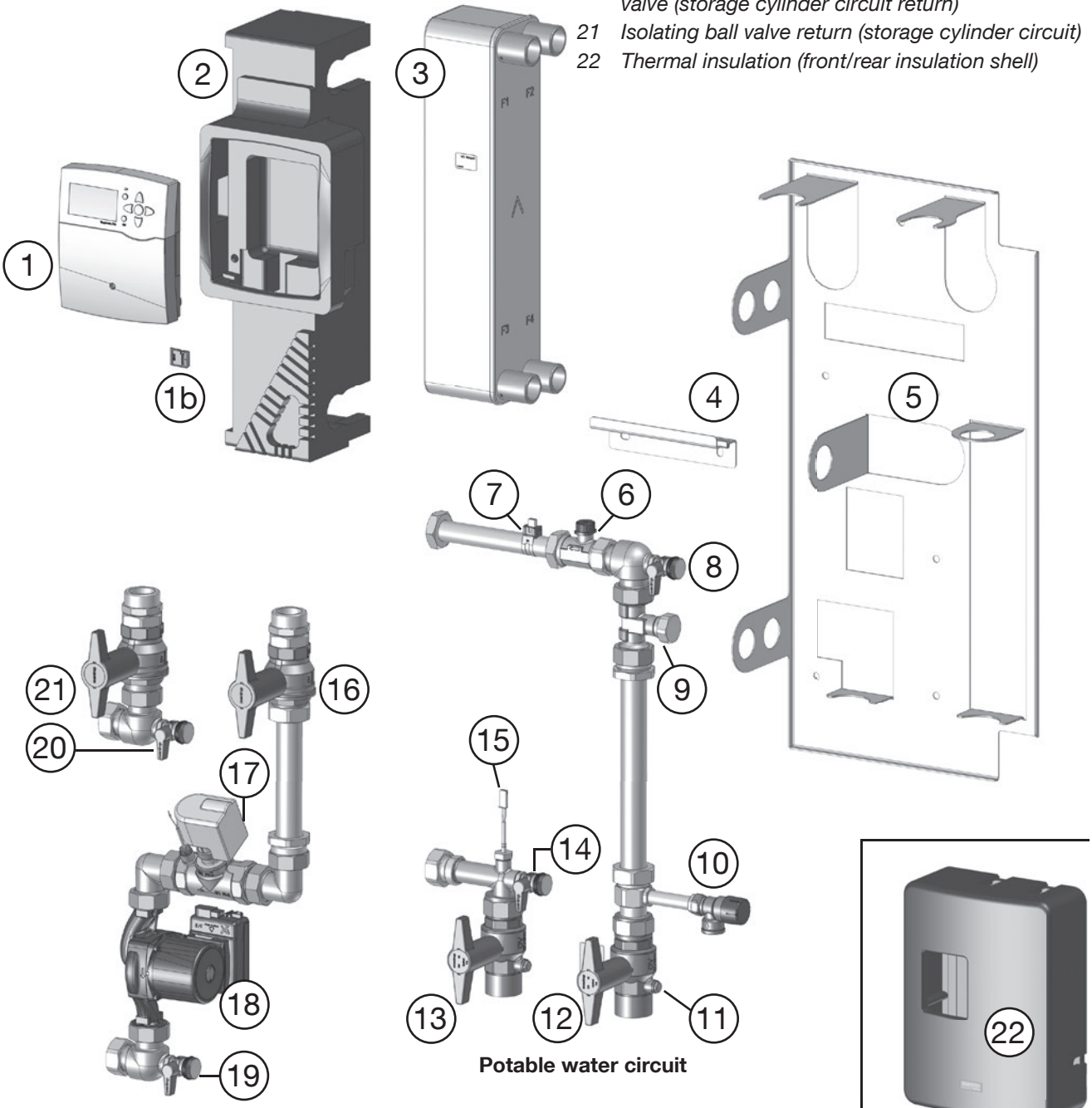

Fig. 3.1: Summary single components “Regumaq X-80“

3.2 Functional description

The “Regumaq X-80” is an electronically controlled product assembly with heat exchanger for the heating of potable water according to the continuous flow principle. The potable water withdrawn at the draw off points is heated just when it is needed which makes a hot potable water reserve in a storage cylinder unnecessary when using this station. Separation of the potable water circuit and the storage cylinder circuit is guaranteed by the integrated heat exchanger.

With a given potable water temperature of 60 °C and a storage cylinder temperature of 80 °C, the hot potable water discharge capacity may vary between 1 and 80 l/min. The hot potable water supply is regulated by the controller (Fig. 3.1, pos. 1) which adjusts the pump (Fig. 3.2, pos. 18) to a (variable) speed in order to feed heating water from the connected buffer storage cylinder into the heat exchanger according to requirements. On the basis of the actual volume flow and temperature (of the potable water) detected by the sensors 6 and 15 (Fig. 3.3), the controller calculates the pump speed which is necessary to achieve the required potable water temperature and switches the throttling valve if required (see below).

Example:

If water is withdrawn simultaneously at several draw off points and the hot potable water consumption increases as a result, the speed of the pump is increased so that more water is fed from the buffer storage cylinder into the heat exchanger. As a result, the heat transfer to the potable water circuit is increased, too.

The station allows for a heat supply according to requirements even with very low potable water consumption. The minimum delivery capacity of the pump (18) is reduced even further by the **throttling valve** (Fig. 3.2, pos. 17) integrated in the storage cylinder circuit. The valve closes from a draw off capacity of approx. 20 l/min.

The fresh water station must not be regarded in isolation but always in combination with other components of the heating system.

NOTICE

Damage to property due to excessive pressure in the installation!

The safety valve (10) only protects the potable water circuit inside the fresh water side.

- According to DIN EN 806-2, the potable water installation has to be equipped with an additional safety valve (without isolating facility).

The buffer storage cylinder and heat generator should be designed according to the performance characteristics of the fresh water station (see technical data under paragraph 3.3 on page 13 and performance characteristic lines in the appendix) and the specific consumption in the object. In this context, the energy consumption during heating operation must also be considered.

Tab. 1 on page 11 shows different application options for the station.

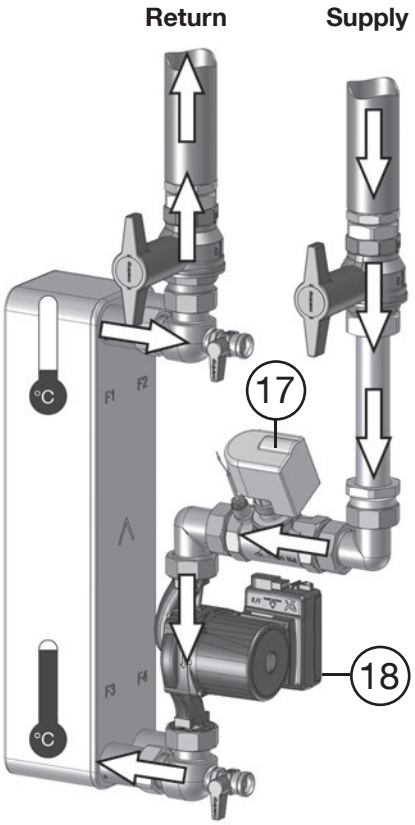

Fig. 3.2: Storage cylinder circuit side with supply from and return to the buffer storage cylinder

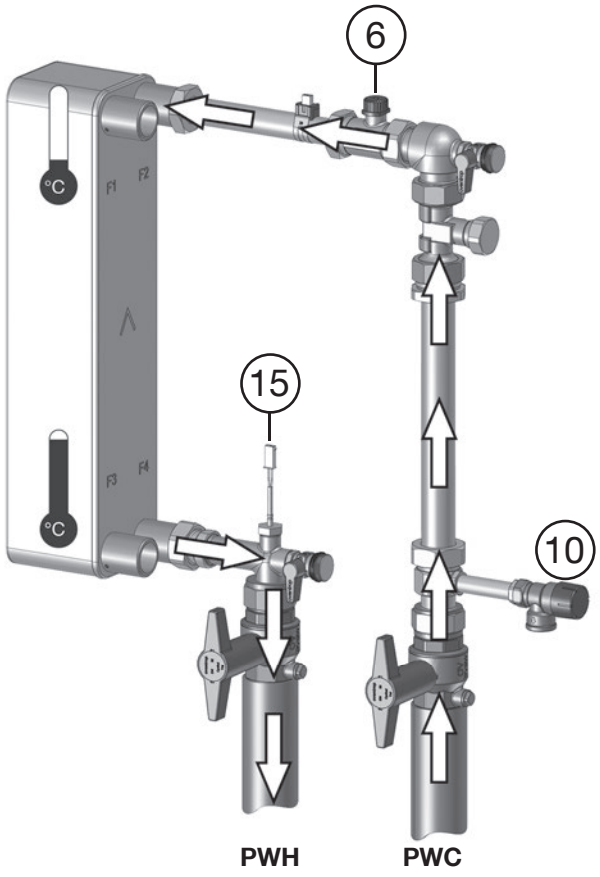

Fig. 3.3: Potable water side with hot water supply (PWH) and cold water connection (PWC)

Application options (Design temperatures: 60°C hot water; 75°C flow temperature, DIN 1988-300)

Number of “Regumaq X-80 stations	**Residential building** Wash basin Sink Shower	**Hospital** Wash basin Shower	**Hotel** Wash basin Shower	**Public showers** Number of showers with 6l/min 60° PWH (simultaneity factor 80%)	**Buffer storage cylinder content**	**Required boiler capacity**
1	19	15	15	14	1,000 l	65 kW
2	180	63	56	28	2,000 l	130 kW

Tab. 1: Cumulative and peak volume flows with one or two installed fresh water station(s) “Regumaq X-80”

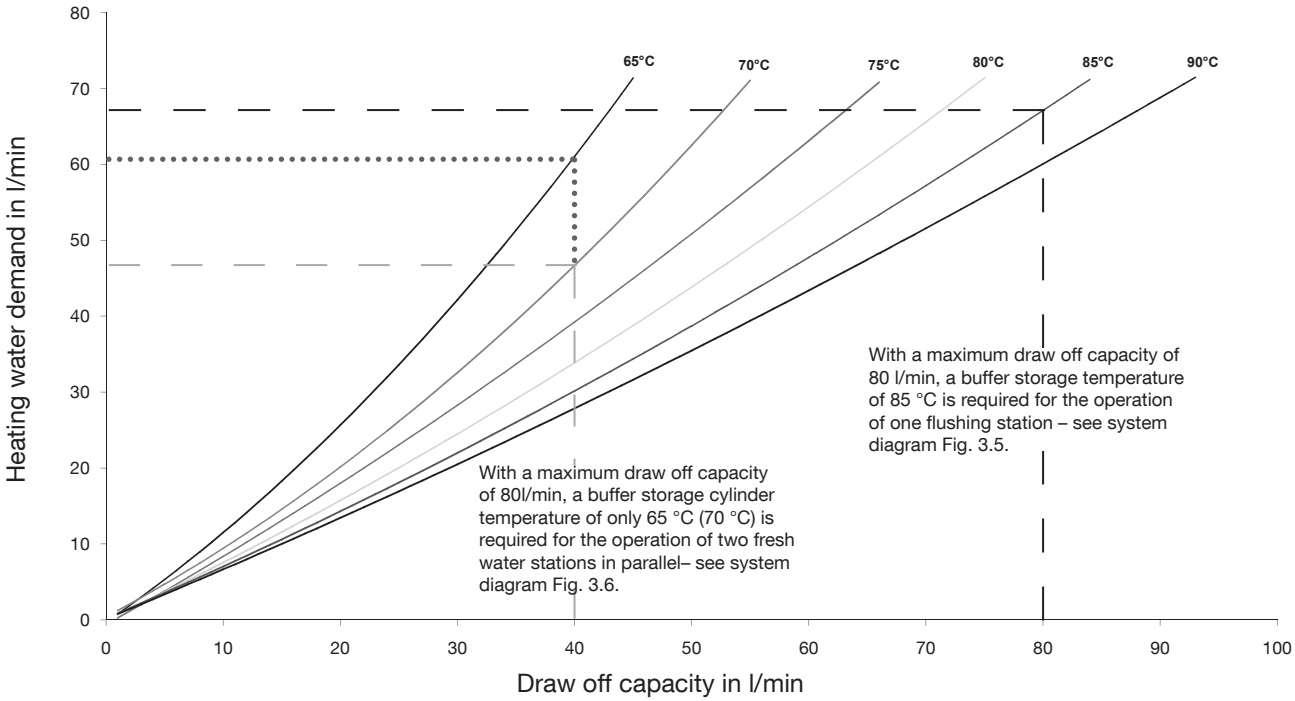

*Fig. 3.4: Typical application “Heating of potable water 10 °C to 60 °C” (max. draw off capacity of 80 l/min)**

*** further performance characteristic lines of the station can be found in the appendix**

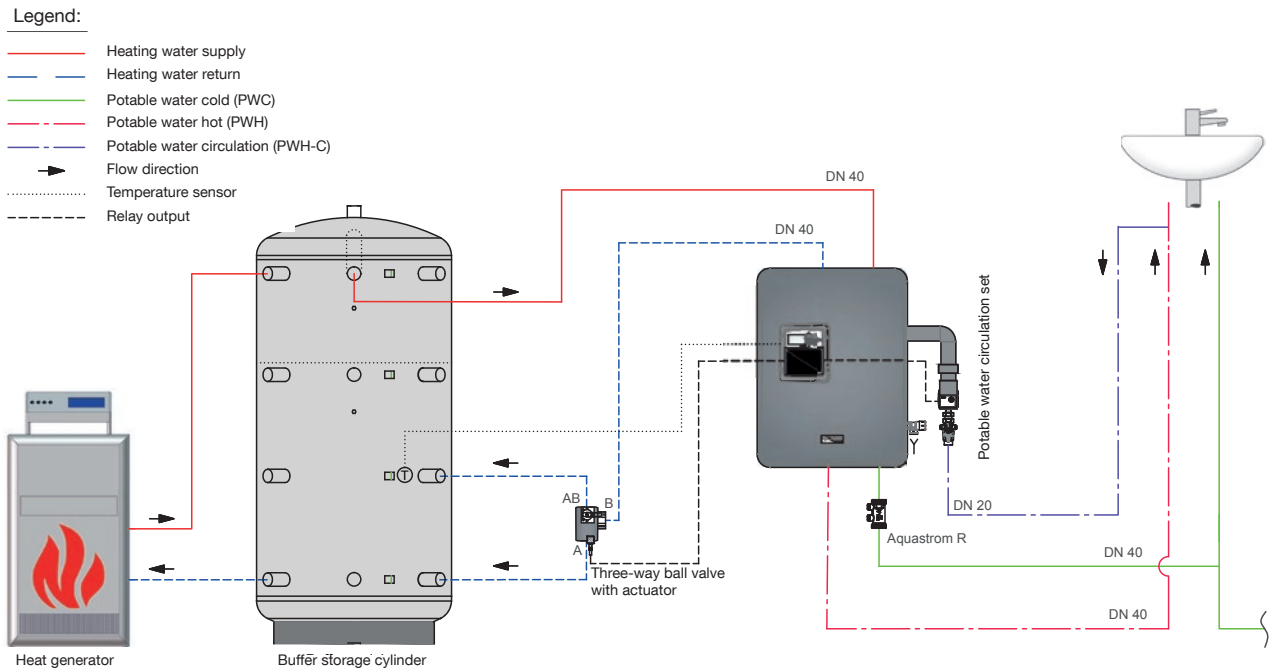

Fig. 3.5: System diagram with one fresh water station “Regumaq X-80”

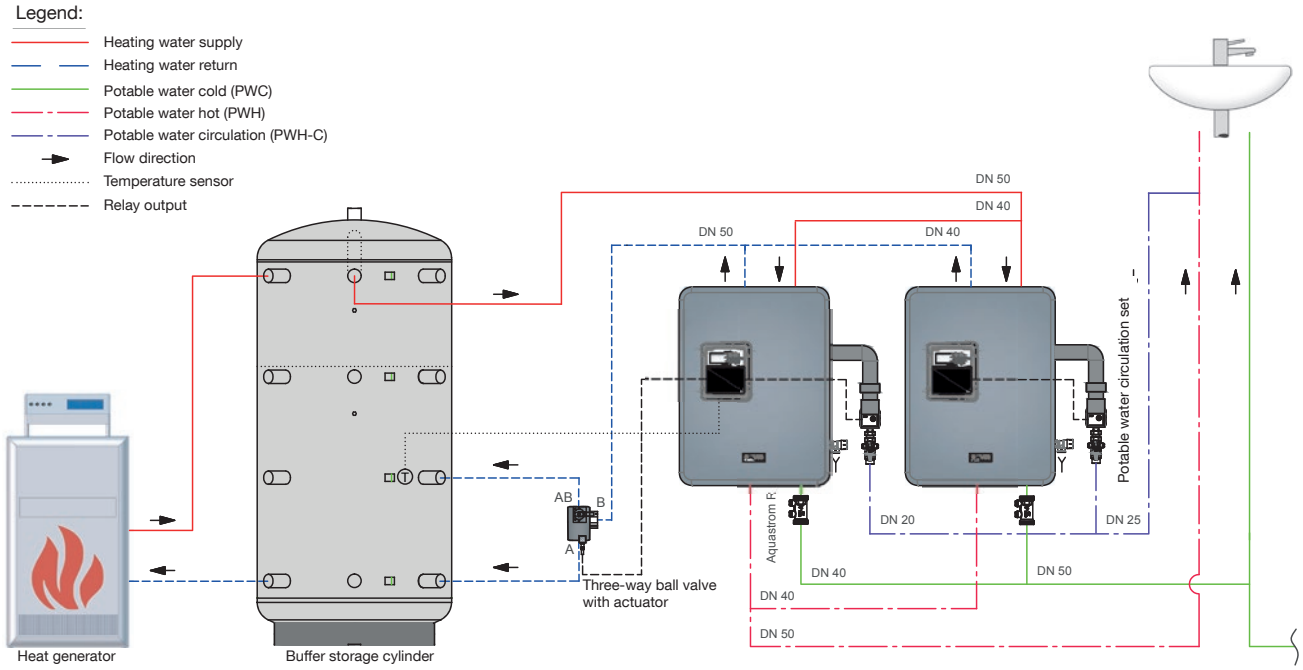

Fig. 3.6: System diagram with two fresh water stations “Regumaq X-80” (system “Tichelmann”)

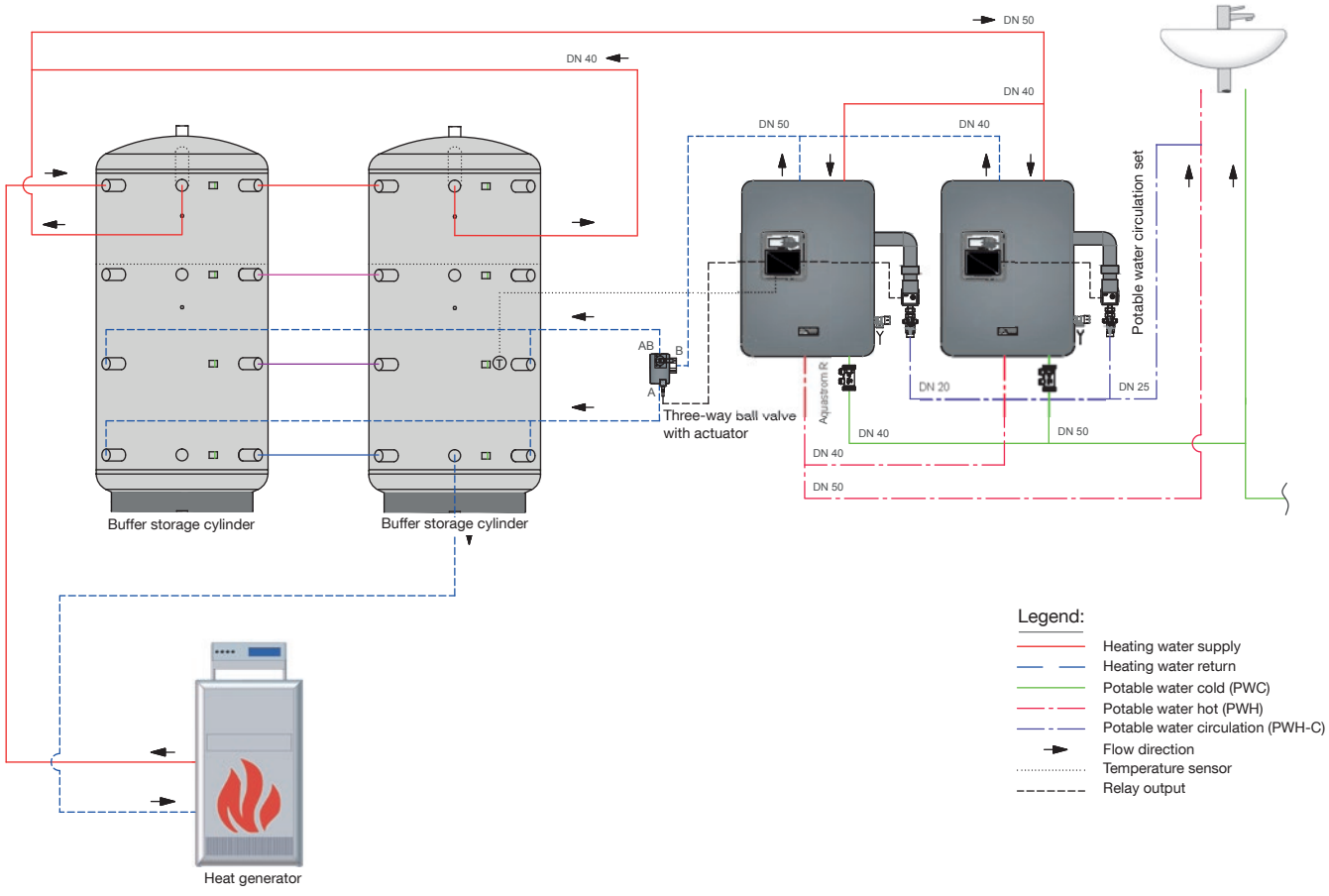

Fig. 3.7: System diagram with two buffer storage cylinders and two fresh water stations “Regumaq X-80”(system ”Tichelmann”)

3.3 Technical data

GENERAL INFORMATION	
Size	DN 32
Max. operating pressure	10 bar (PN 10)
Max. operating temperature	95°C
Weight	42 kg

CONNECTIONS	
Primary & secondary circuit	G 1½ M, flat sealing
Circulation	G 1 M, flat sealing
Flushing, filling and draining ball valves	G ¾ M, for hose connection

STORAGE CYLINDER CIRCUIT	
Fluid	Heating water
k_V value	6.9
Pump	Grundfos UPML 25-105 PWM
Power consumption during operation (pump)	3 - 140W

POTABLE WATER CIRCUIT	
Fluid	Potable water
Discharge capacity (with Δ T = 20K)	1 – 80 l/min
k_V value	6.6
Safety valve	10 bar
- General temperature range **- Controller presetting**	20 - 75 °C 20 - **60 °C**

MATERIALS	
Valves and fittings	Brass / dezincification resistant brass / bronze
Seals	EPDM
Insulation	Expanded polypropylene
Pipes	Stainless steel 1.4404
Heat exchanger	Stainless steel 1.4401 / brazed copper (item no. 1381580) Stainless steel 1.4401 / brazed copper, *with Sealix® protective layer* (item no. 1381582)

DIMENSIONS	
Width/Height/Depth	660/875/300 mm
Distance between pipe centres (primary)	220 mm
Distance between pipe centres (secondary)	205 mm
Pipe centres to wall (primary)	150 mm
Pipe centres to wall (secondary)	90 mm
Distance sealing surfaces Primary/secondary side	800 mm

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Made in Germany

"Regumaq X-80" DN32
Art.-Nr./ Item No./ Référence: 1381580
p max: PN 10 t max: 95°C
Regler: Siehe Typenschild im Regler-Klemmkasten.
Controller: See type plate in the terminal box of the controller.
Régulateur: Voir plaque du constructeur dans le boîtier de raccordement du régulateur.

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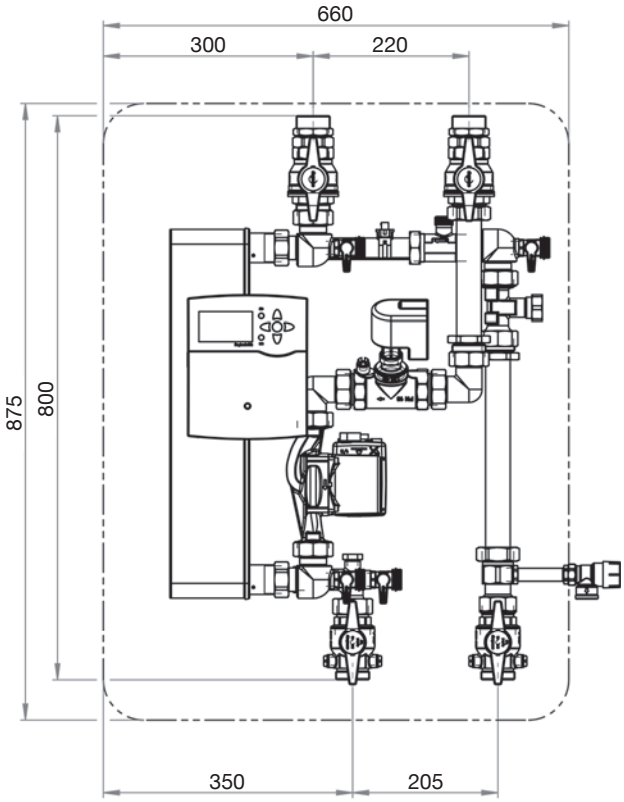


Fig. 3.8: Dimensions “Regumaq X-80” (front)

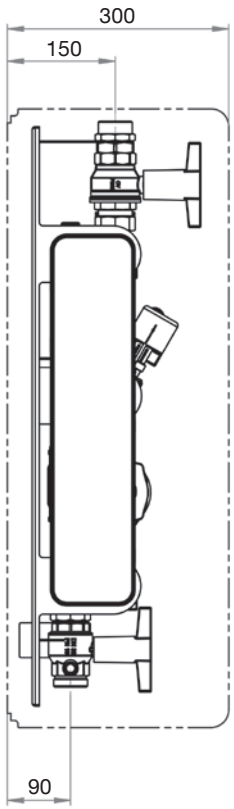


Fig. 3.9: Dimensions “Regumaq X-80” (side)

3.4 Accessories and spare parts

WARNING

Danger from wrong accessories or spare parts!

Wrong or faulty accessories and spare parts may not only lead to damages, malfunctions and operational failures but may also involve danger to life and limb.

- Only use original spare parts and original accessories of the manufacturer.

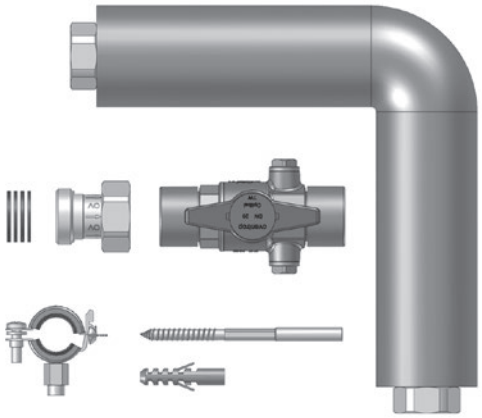
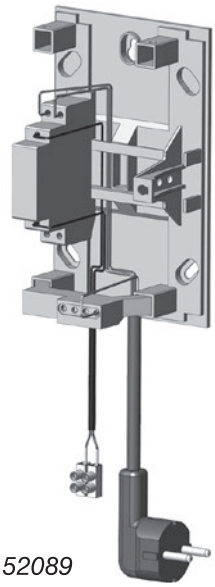


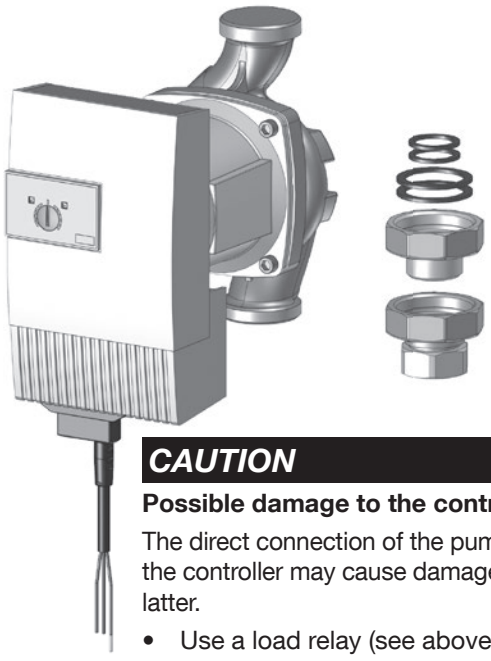
Fig. 3.10: Potable water circulation set, item no. 1381590

The controller can be damaged when connecting components (such as pumps, electrical immersion heaters and similar) with a rated current exceeding 1 Ampere to it. In this case, the Oventrop load relay must be installed between the controller and the component.



WARNING Installation must only be carried out by a qualified electrician!

Fig. 3.11: Load relay, item no. 1152089



CAUTION

Possible damage to the controller!

The direct connection of the pump to the controller may cause damage to the latter.

- Use a load relay (see above).

Fig. 3.12: Circulation pump Wilo Stratos (12 m), item no. 1381592

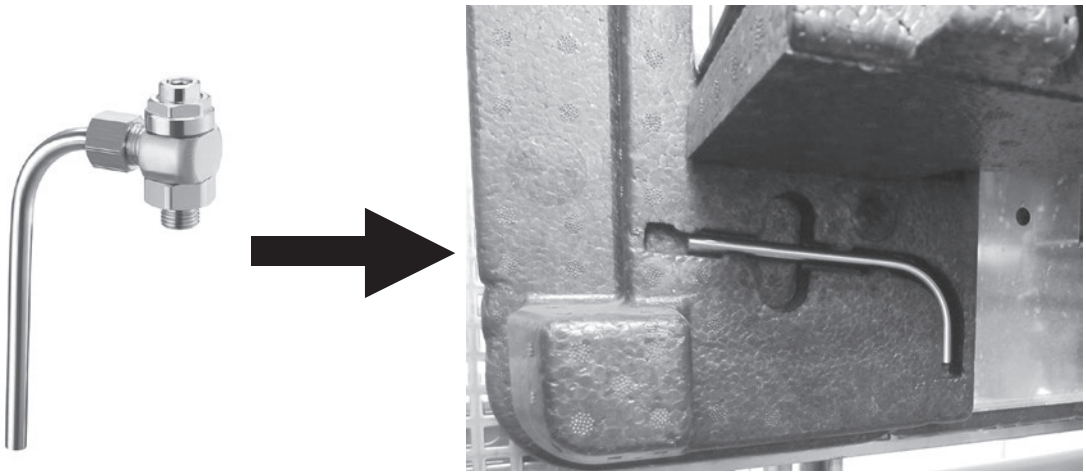


Fig. 3.13: Water sampling valve, item no. 4209102, can be inserted into the rear insulation shell made of expanded polypropylene after use

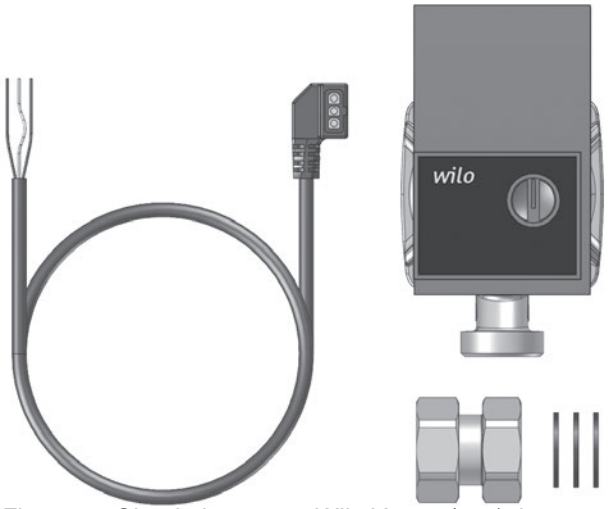


Fig. 3.14: Circulation pump Wilo Yonos (7 m), item no. 1381591

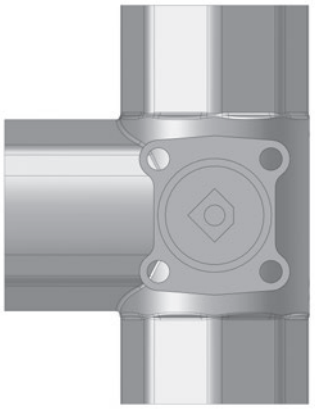


Fig. 3.17: Ball valve for return layering, item no. 1381192-94

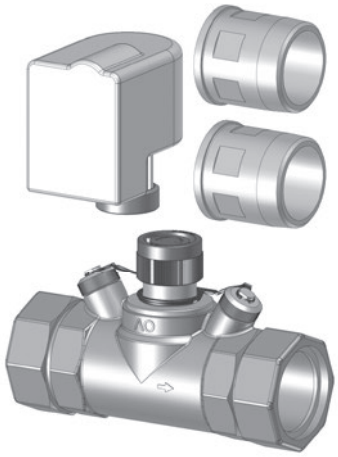


Fig. 3.15: Isolation device against gravity circulation, item no. 1381078

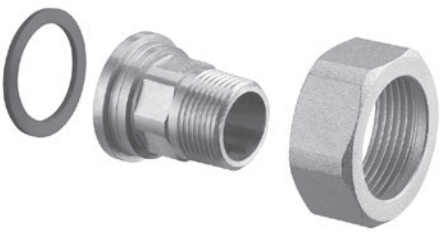


Fig. 3.16: Tailpipe, collar nut and ring gasket, item no. 4201475

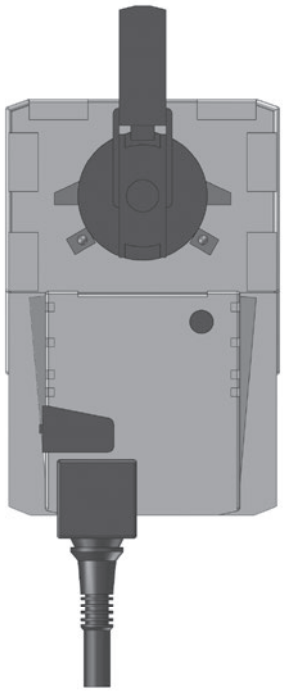


Fig. 3.18: Actuator for ball valve for return layering (see above), item no. 1381199

PN 16 with female thread

DN 32: Item no. 6120010

DN 40: Item no. 6120012

DN 50: Item no. 6120016

PN 16 with male threaded tailpipes (not illustr.)

DN 32: Item no. 6122010

Fig. 3.19: “Aquanova Magnum” Potable water filter

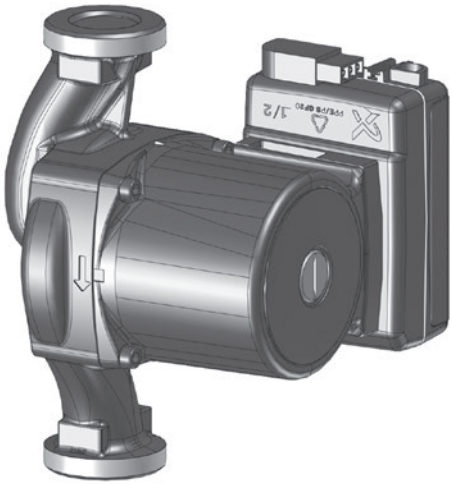


Fig. 3.20: Storage cylinder circuit pump (replacement); item no. 1381599

Fig. 3.21: Controller “Regtronic RQ” (replacement with plug-in connections and sensors); item no. 1381597

Fig. 3.22: Filter insert (replacement); item no. 6125101

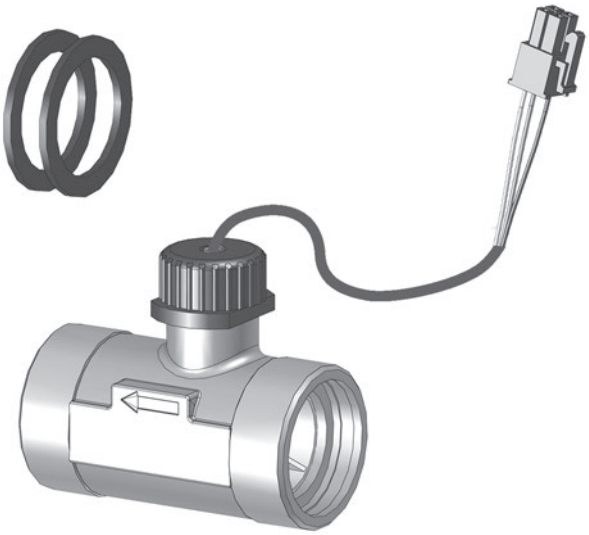


Fig. 3.24: Flow sensor (potable water circuit, replacement), VTH 25; item no. 1381593

Fig. 3.23: Heat exchanger copper brazed (replacement, item no. 1381595); copper-brazed, with Sealix® protective layer (replacement, item no. 1381584)

4. Installation and commissioning

WARNING

Danger from pressurised components!

The procedures described in this chapter refer to the new installation of a fresh water station. If an existing heating station or dwelling shall be **upgraded**, the following safety notes must be observed:

- Before starting work, make sure that the **system is depressurised**. **Drain** the heating system or **isolate** the supply pipes of the section.
- Have all work at the heating system carried out by a **heating, gas and water specialist**.

CAUTION

Risk of injury from heavy station!

The fresh water station is very heavy. An uncontrolled falling down may lead to injuries.

- Always wear safety shoes during installation.
- Installation must be carried out with the help of a second person.

WARNING

Danger to life due to electric shock!

There is a risk of electric shock if the fresh water station is energized during maintenance, repair or removal.

- Before starting work, **completely disconnect the controller from the power supply** and protect it against accidental restart.
- The controller must only be opened by a qualified electrician

4.1 General installation advice

- The product assembly must be installed in a **dry** and **frost-free place**.
- When choosing the installation location, please make sure that the ambient temperature during operation does not **exceed 40 °C**.
- The station must always be installed in a **vertical** position and never in a horizontal or lying position.
- The fresh water station should be installed as close as possible to the buffer storage cylinder. The nominal pipe diameter of the pipe connection must be at least **DN 40**.
- A **potable water filter (mesh size ≤ 140 µm)** must be installed in the cold water supply of the station.
- For system constellations as shown in Fig. 3.6 on page 12 and Fig. 3.7 on page 12, the nominal diameter of the pipe connection must be at least **DN 50**.
- The station must always be easily accessible.

4.2 Wall attachment of the station

Please make sure that a fused **earthed socket** is available at the installation location.

Because of the high weight of the station, please make sure that the wall has a **sufficient load bearing capacity**.

Keep the following tools available for wall attachment:

- Pipe wrench
- Spirit level
- Drill (10 mm masonry drill bit)
- 13 mm spanner/ reversible ratchet handle with 13 mm socket for wrenches
- 50 mm spanner
- 54 mm spanner

1. Unpack the fresh water station.
2. Take off the front insulation shell.
3. Remove the product assembly (A) from the rear insulation shell (U) (Fig. 4.1).

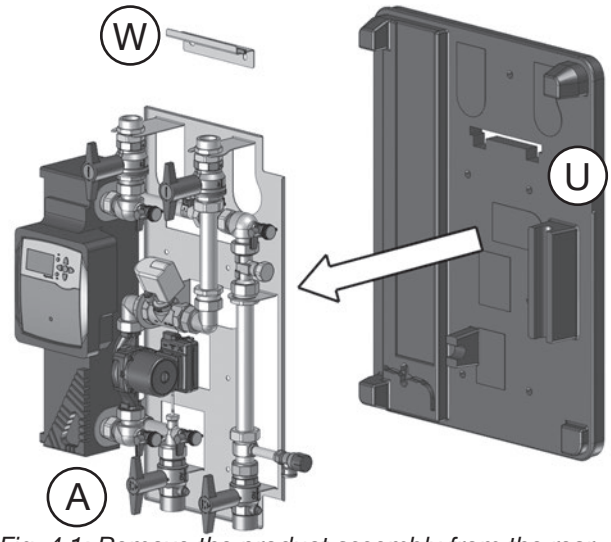


Fig. 4.1: Remove the product assembly from the rear insulation shell

4. Insert the angled wall bracket (W) into the rear insulation shell (U) from the back (Fig. 4.2).

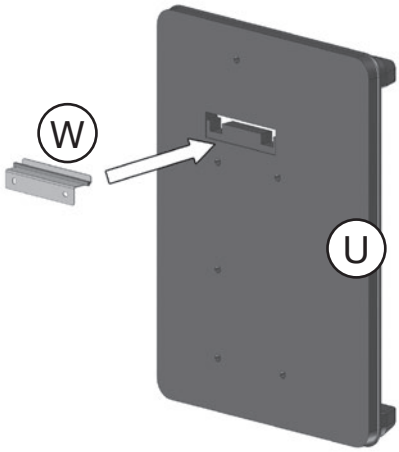


Fig. 4.2: Insert the angled wall bracket into the rear insulation shell

5. Hold the rear insulation shell (U) with the angled wall bracket (W) against the wall in a vertical position and use it as drilling jig (Fig. 4.3)
6. Mark two drill holes for the angled wall bracket (W). Remove the rear insulation shell (U) with the angled wall bracket (W), drill the holes and equip them with dowels.

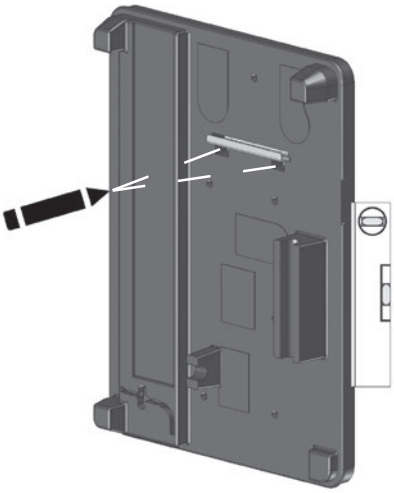


Fig. 4.3: Use the rear insulation shell as drilling jig for the angled wall bracket

7. Remove the angled wall bracket (W) from the rear insulation shell (U) and fix it onto the wall with the help of the supplied two screws M 8 x 70 and washers (Fig. 4.4).

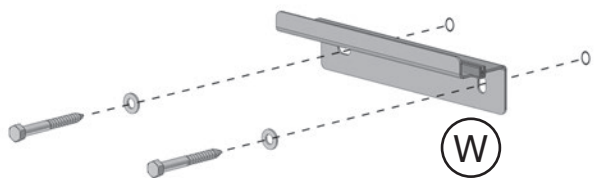


Fig. 4.4: Fix the angled wall bracket onto the wall

8. Hang the rear insulation shell (U) onto the fixed angled wall bracket (W) and use it as drilling jig for the four screws provided for the fixing of the product assembly (A) (Fig. 4.5). The base plate and the rear insulation shell feature six bore holes.
9. Select and mark four drill holes. Remove the rear insulation shell (U) from the angled wall bracket, drill the holes and equip them with the supplied dowels.
10. Hang the rear insulation shell (U) onto the angled wall bracket (W).
11. Hang the product assembly (A) onto the angled wall bracket (W) and fix it onto the wall with the help of the supplied four screws M 8 x 100 and washers (Fig. 4.6).

▶ Wall attachment of the fresh water station is complete. Pipework connection can be carried out next.

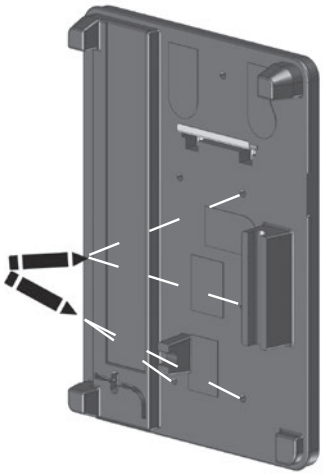


Fig. 4.5: Use the rear insulation shell as drilling jig for fixing the product assembly

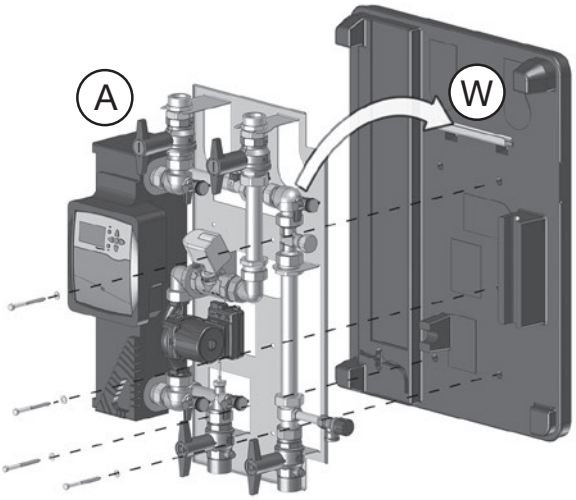


Fig. 4.6: Hang the product assembly onto the angled wall bracket

4.3 Connection of the station to the pipework

The four connections feature a **flat sealing G 1½ male thread**.

Connect the pipework as shown in Fig. 4.8.

A: Storage cylinder circuit - supply

B: Storage cylinder circuit - return

C: Hot potable water outlet

D: Cold water supply

NOTE

Only the supply pipe "storage cylinder circuit - supply" (A) for the fresh water station must be connected to **one** connection pipe of the buffer storage cylinder (**hydronic decoupling principle**). A common connection with other components of the heating system (e.g. with the help of a T-piece) is not allowed.

When installing **tailpipes** (paragraph 3.4), the included **ring gaskets** must be used. The installation of a **strainer** in the **"storage cylinder circuit - supply" pipe (A)** is strongly recommended.

A **potable water filter (TF)** must be installed as close as possible to the cold water connection of the station (D) (see Fig. 3.19 on page 16).

When installing a circulation pipe, install a strainer which is suitable for potable water in the supply of the circulation set so that no particles or impurities may penetrate the measuring turbine.

When operating the fresh water station in combination with Oventrop buffer storage cylinders "Hydrocor HP", please make sure that the **supply pipe "storage cylinder circuit - supply" (A)** is connected to the **central connection pipe** (Fig. 4.7).

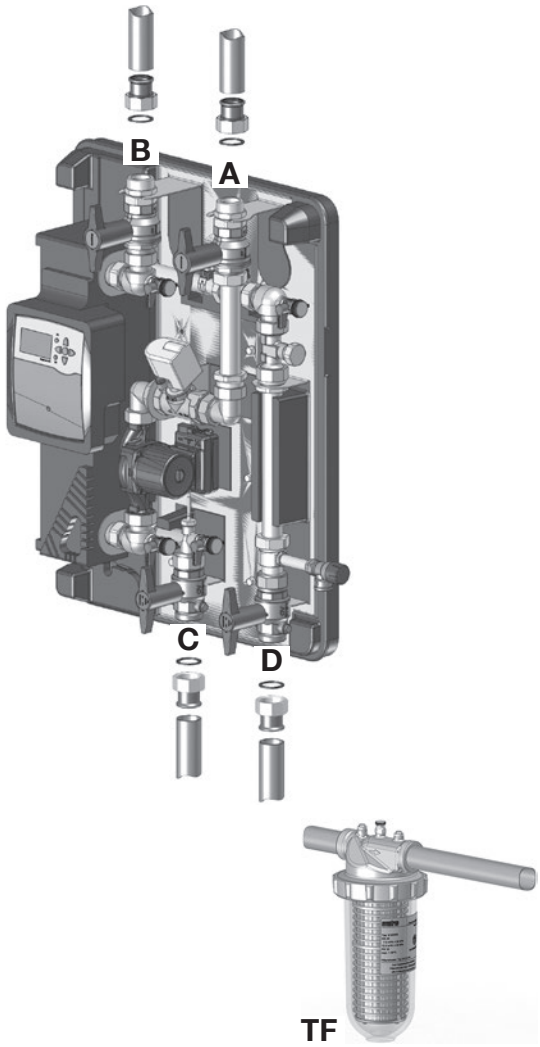


Fig. 4.8: Connection of pipes with potable water filter to the station

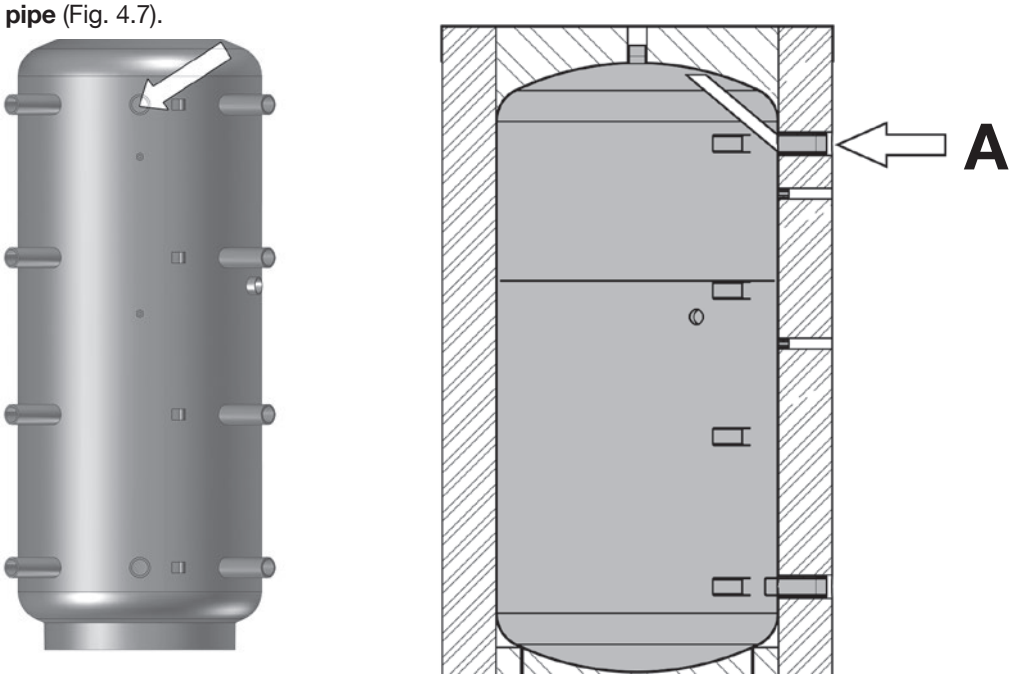


Fig. 4.7: Position for the connection of the "storage cylinder circuit - supply" pipe of the fresh water station to the buffer storage cylinder

4.4 Connection of the circulation set with pump

The optional potable water circulation set (see Fig. 3.10) and the circulation pump (e.g. Fig. 3.14 on page 15) are often used in combination with the fresh water station “Regumaq X-80”. Especially in buildings with an extensive pipework, hot potable water is only available at each draw off point without delay if the hot potable water circulates constantly. Legal requirements, such as the German Potable Water Ordinance, call for the installation of a circulation pipe in large installations with a water volume of more than 3 litres between the potable water heater and at least one draw off point.

The separate documents of the potable water circulation set (doc. no. 138159080) and the installed pump must be observed!

WARNING

Danger to life due to electric shock!

The controller casing must be opened for the connection of the circulation pump. Live components inside the casing.

- Before starting work, **completely disconnect the controller from the power supply** and protect it against accidental restart.
- The controller must only be opened by a **qualified electrician**.

WARNING

Risk of injury from pressurised components!

- Never work on the station during operation.
- In case of upgrading: Before starting work, drain the system or isolate the supply pipes.
- Let the installation cool down.

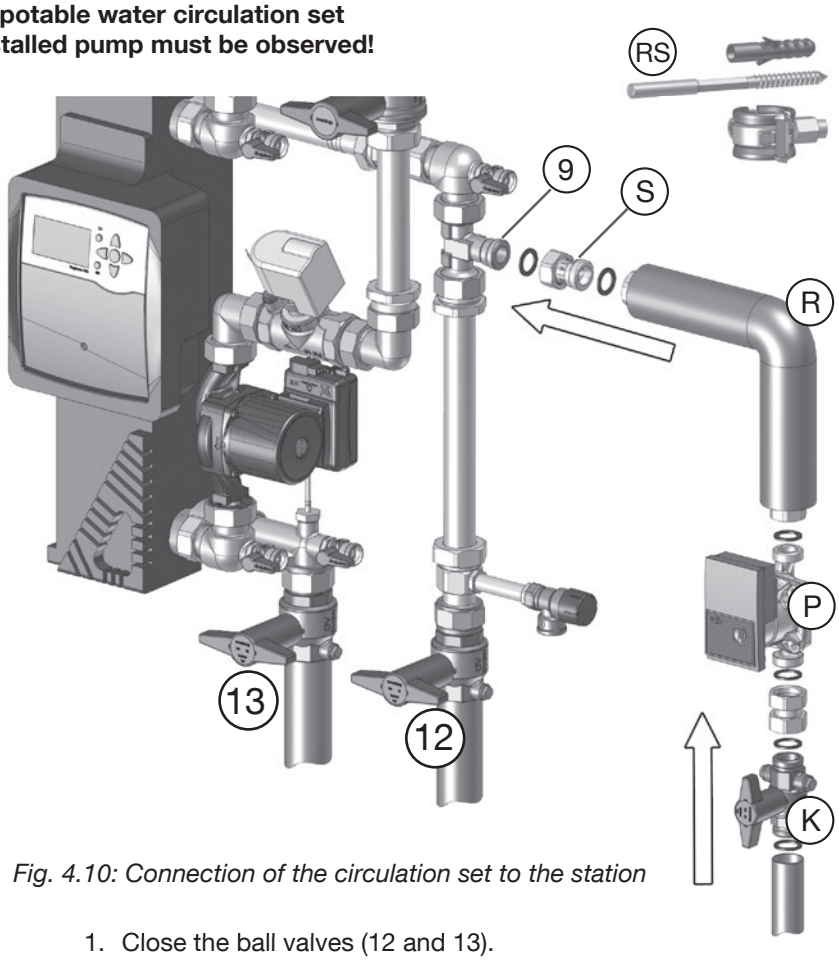


Fig. 4.10: Connection of the circulation set to the station

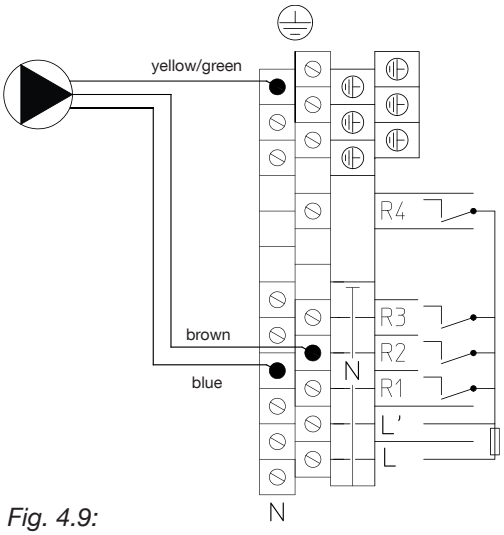


Fig. 4.9: Wiring of the circulation pump and the controller

1. Close the ball valves (12 and 13).
2. Remove the cap (not illustrated) from the connection for the circulation pipe (9).
3. Connect the check valve (S) with the included ring gaskets to connection (9).
4. Drill a hole into the wall, insert a dowel and screw the hanger bolt with the pipe clamp (RS) into the dowel.
5. Screw the pipe elbow (insulated, R) to the check valve (S).
6. Align the pipe elbow (insulated, R) with the pipe clamp (RS) and fix it.
7. Connect the pump (P) with adapter(s) and ring gasket(s) to the pipe elbow (R).
8. Mount the ball valve (K) with seals between the pump (P) and the circulation pipe.
9. Bleed the circulation pipe (see paragraph 4.6.3 on page 25).
10. Check the connections between the fresh water station and the circulation set for leaks.

NOTICE

Circulation pumps with a rated current exceeding 1 Ampere (e.g. Wilo Stratos 12 m, item no. 1381592, see Fig. 3.12 on page 14), may cause damage to the controller. In this case, the **Oventrop load relay** (**item no. 1152089**, see Fig. 3.11) must be connected between the controller and the pump!

4.5 Connection of the isolation device against gravity circulation

The operation of the speed controlled pump (18) depends on the energy demand of the potable water circuit. Once the set potable water temperature has been reached, the pump is switched off by the controller. Due to high temperature differences, the phenomenon of gravity circulation may, however, occur in the storage cylinder circuit even when the pump is switched off. Gravity circulation, however, only poses a problem in exceptional cases, i.e.:

- In potable water installations without circulation pipe or
- In potable water installations with circulation pipe but with very low energy consumption (e.g. public showers in gyms).

In theses cases, the isolation device against gravity circulation (see Fig. 3.15 on page 15, item no. 1381078) must be installed in the cold return pipe to the buffer storage cylinder (storage cylinder circuit).

WARNING

Danger to life due to electric shock!

The controller casing must be opened for the connection of the actuator. Live components inside the casing.

- Before starting work, **completely disconnect the controller from the power supply** and protect it against accidental restart.
- The controller must only be opened by a **qualified electrician.**

WARNING

Danger from pressurised components!

- Never work on the station during operation.
- In case of upgrading: Before starting work, drain the system or isolate the supply pipes.
- Let the installation cool down.

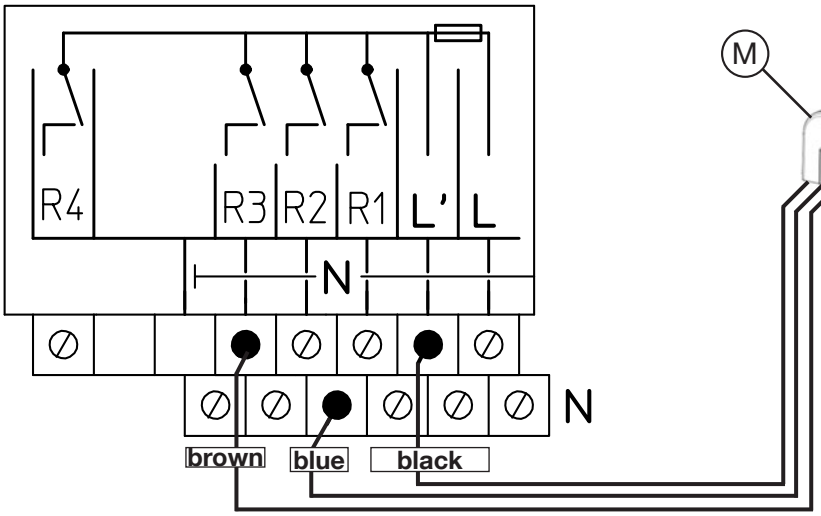


Fig. 4.11: Wiring of the actuator of the isolation device and the controller

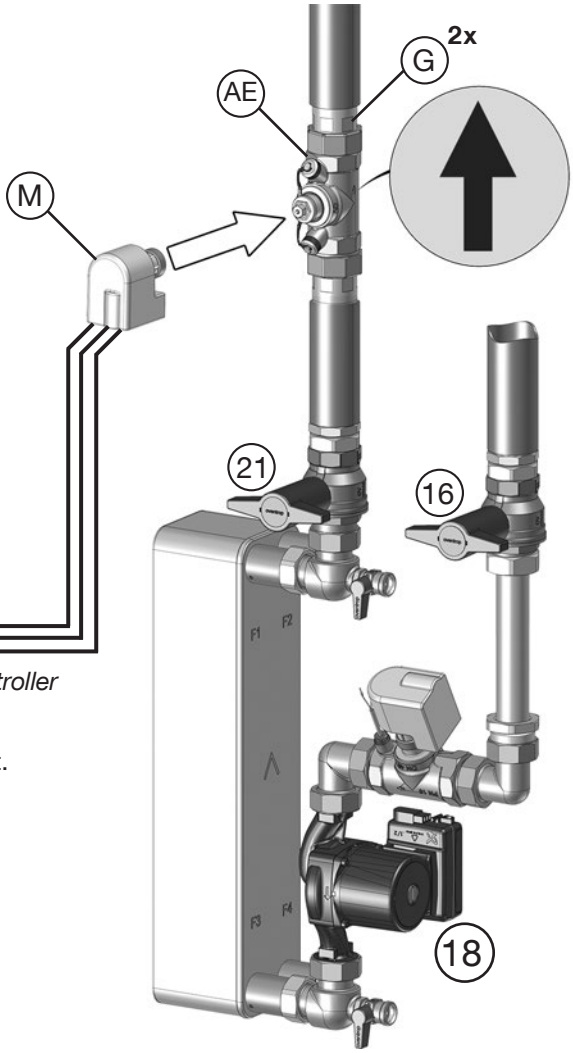


Fig. 4.12: Installation of the isolation device and the actuator

1. Close the ball valves (21 and 16) of the storage cylinder circuit.
2. Mount the isolation device (AE) in the **return pipe** between the fresh water station and the buffer storage cylinder (the **direction of flow has to conform to the arrow**). Use the enclosed tailpipes (G).
3. Fill in heating water by opening the ball valves (21 and 16) .
4. Check all installation points for leaks.
5. Close the ball valves.
6. Mount the actuator (M) onto the isolation device (AE).
7. Carry out wiring of the actuator (M) and the controller.

The separate document of the Oventrop isolation device (doc. no. 138107880) must be observed!

4.6 Commissioning of the fresh water station

4.6.1 Electrical connection

The station is connected to the mains power supply by inserting the plug of the pre-assembled connecting cable into an earthed socket.

If the station is used without potable water circulation set, the controller needs not to be opened and there is thus no need to consult a qualified electrician. Commissioning can be carried out by a heating, gas and water specialist.

Fig. 4.14: Power supply via the 230 V network

4.6.2 Filling and bleeding of the storage cylinder circuit

The bleeding process is of major importance as airlocks in the storage cylinder circuit must be excluded for a perfect functioning of the station.

1. Open the ball valves (21 and 16) (anticlockwise).
2. Connect the cold water hose to the fill and drain ball valve (19).
3. Open the ball valve (19) and fill in water.

▶ The fresh water station is bled via the connected buffer storage cylinder (audible hissing sound). The (first) bleeding operation is complete, once the hissing sound stops.

4. Close the fill and drain ball valve (19).

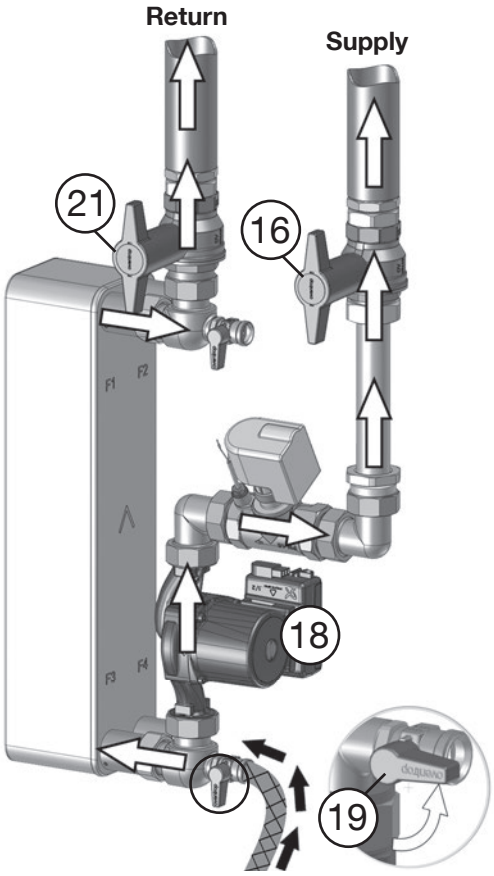


Fig. 4.15: Filling and bleeding of the storage cylinder circuit

After having bled the station with cold water (see steps 1-4), the **pump (18)** has to be switched on for some minutes for complete bleeding. The **emergency operation** of the pump which is **activated** via the **controller** is used for this purpose (see below).

The controller menu shown on the display is operated via the keypad (see Fig. 4.13).

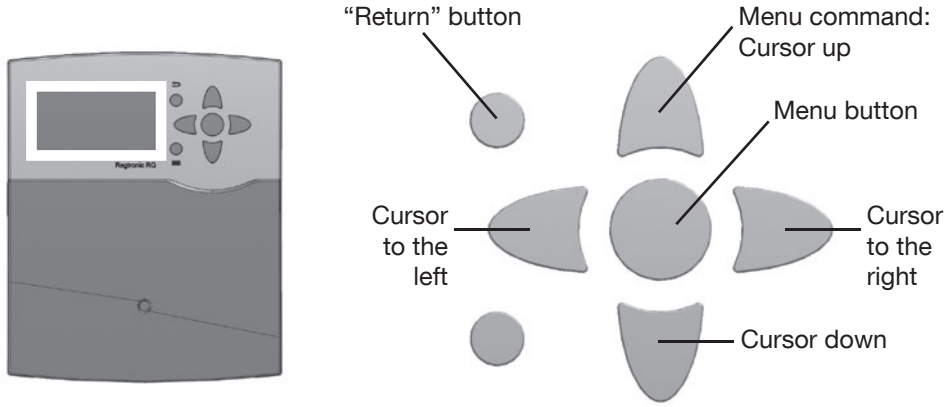
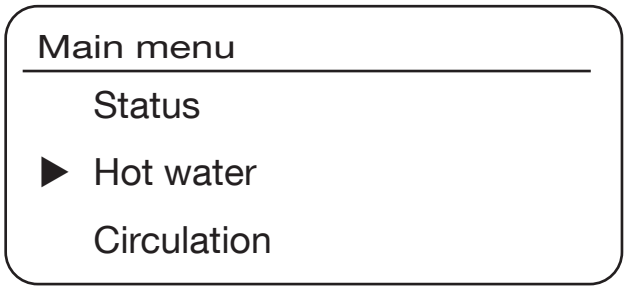
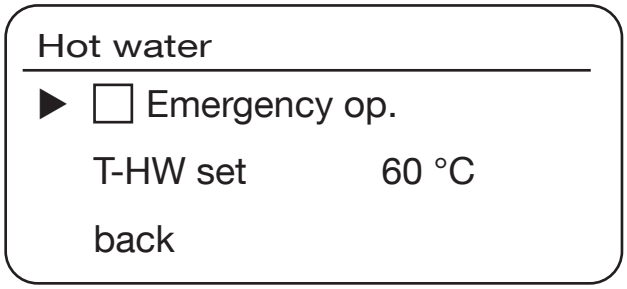


Fig. 4.13: Controller display and key assignment

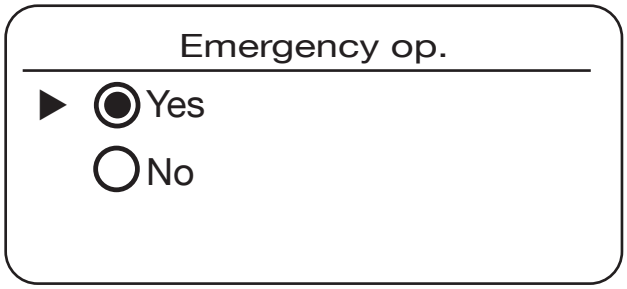
5. Set the pump to emergency operation by selecting **Hot water** in the main menu. Confirm by pressing the menu button.



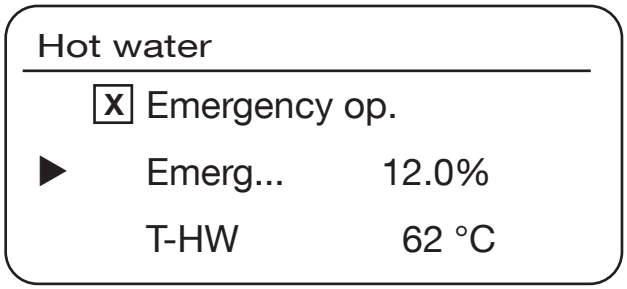
6. Select **Emergency op.** in the submenu Hot water and confirm.

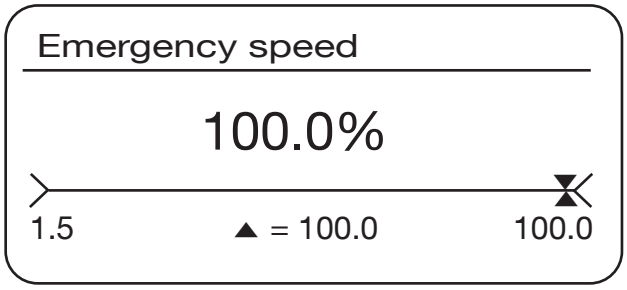


7. Confirm emergency operation with **Yes** (press the menu button).

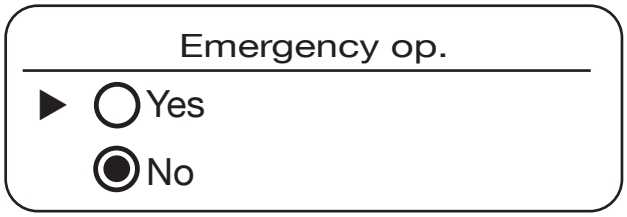


8. Increase the pump speed (“Emergency speed”) from 12% to 100% and confirm by pressing the menu button.





9. Wait until the hissing sound at the venting valve of the buffer storage cylinder stops. Deactivate the emergency operation to switch off the pump.



▶ Bleeding of the fresh water station is complete.

Finally, increase the water pressure in the storage cylinder circuit to the required system-specific target value. The cold water hose (still connected) can be used for this purpose (with the fill and drain ball valve in the open position).

4.6.3 Filling and bleeding of the potable water circuit

CAUTION

Risk of scalding whilst the system is in operation!

If the heating system has already been put into operation and the connected buffer storage cylinder been heated, there is risk of scalding in case of an uncontrolled escape of hot fluids.

- Close the ball valve (16 and 21) of the fresh water station (see Fig. 4.12 on page 22).

CAUTION

Danger from leaks!

An improper installation may lead to leakages and an uncontrolled escape of hot fluids when filling the station.

- During filing, check the couplings for leaks and re-tighten them if necessary.

NOTICE

Damage to property caused by pressure impacts!

The sudden injection of potable water into the station may cause damage to the sensors or sealing points.

- Always open ball valves slowly or progressively.

1. Open the ball valve (13).
2. Open the ball valve (12) **slowly** to fill the station.
3. Bleed the station by opening the ball valve (14) slightly until no more air escapes.
4. Close the ball valve (14).
5. Bleed the pipework by opening the draw off point at the most remote location.

▶ Bleeding and filling of the potable water circuit is complete.

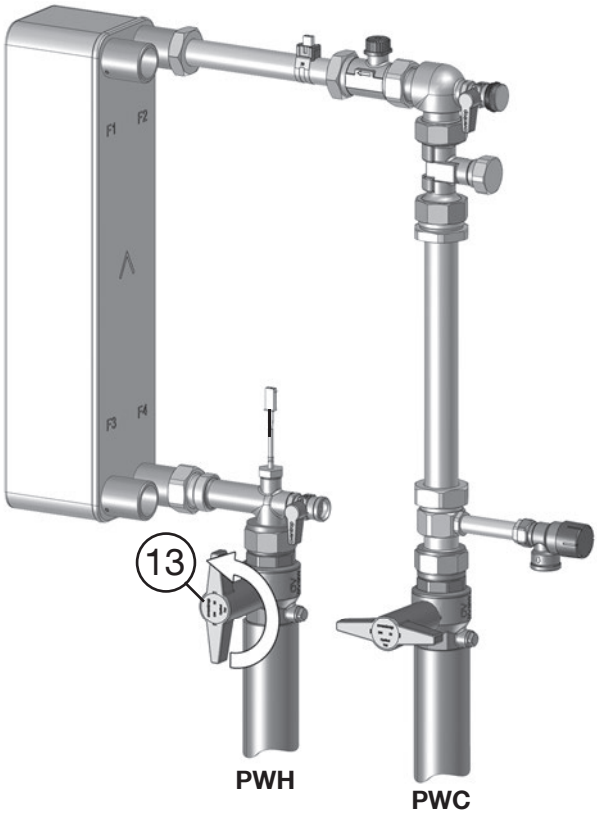


Fig. 4.16: Open the hot potable water ball valve (PWH)

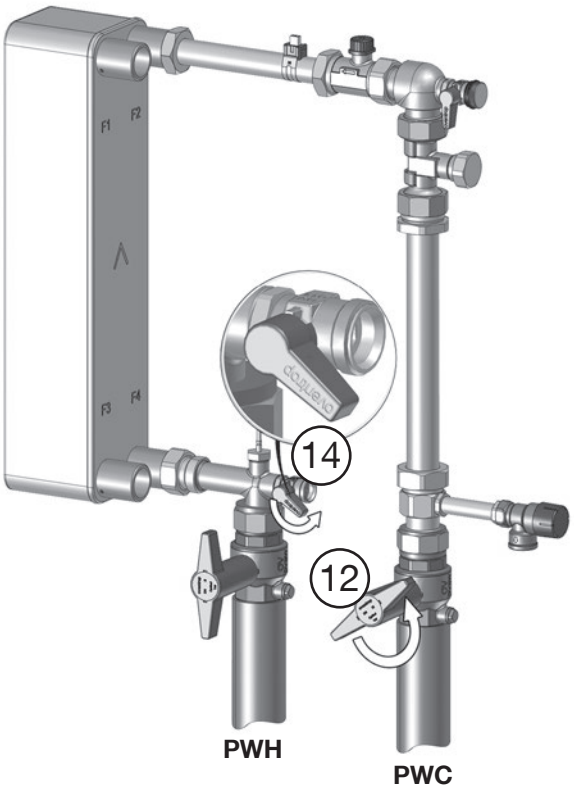


Fig. 4.17: Fill in cold potable water (PWC)

4.6.3.1 Filling and bleeding of an (optional) circulation pipe in the potable water circuit

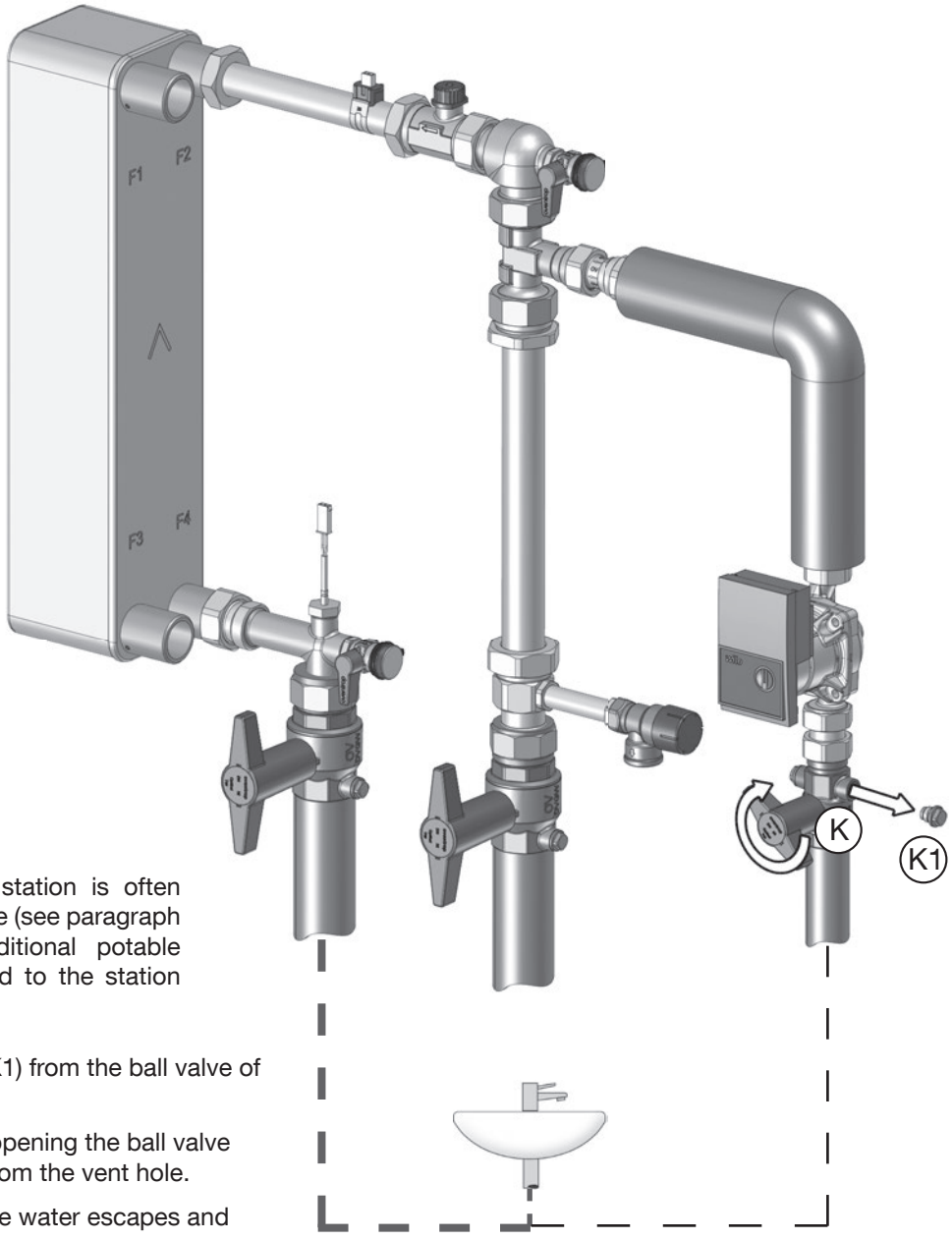


Fig. 4.18: Bleeding of an additional circulation pipe

In practice, the fresh water station is often operated with a circulation pipe (see paragraph 4.4 on page 21). This additional potable water pipe which is redirected to the station has to be bled, too.

6. Remove the sealing plug (K1) from the ball valve of the circulation pipe.
7. Fill the circulation pipe by opening the ball valve (K) slowly. Air will escape from the vent hole.
8. Close the ball valve (K) once water escapes and refit the sealing plug (K1).
9. Finally, open the ball valve (K) again.

▶ Bleeding of the circulation pipe is complete.

During normal operation, the ball valves (12 and 13) (potable water circuit) as well as (16 and 21) (storage cylinder circuit) must be in vertical open position. The fill and drain ball valves (8, 14, 19 and 20) (see Fig. 3.1 on page 9) must be closed.

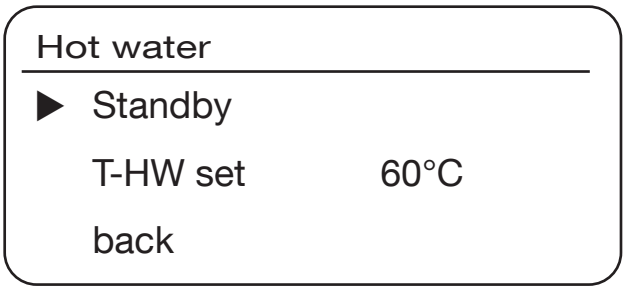
4.6.4 Functional control

The functional control is carried out via the controller (Fig. 3.1, pos. 1).

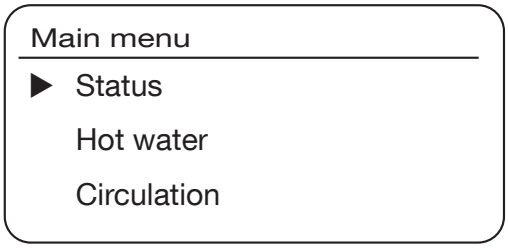
The enclosed installation and operating instructions (for the controller) must be observed!

Correct functioning of the fresh water station is guaranteed if the (actual) value detected by the hot potable water temperature sensor **(Fig. 3.1, pos. 15)** displayed by the controller **is not more than 5 °C higher or lower than the nominal value set at the controller** (e.g. 60 °C).

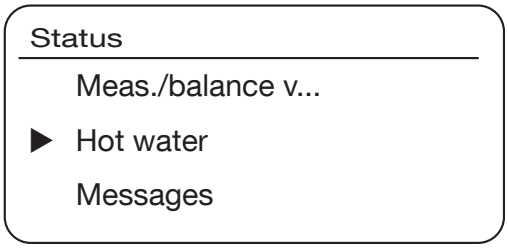
During operation, the controller display should show the set nominal temperature which must be known for its comparison with the actual value of the temperature sensor.



If this screen is not displayed, press the “return” button (see on the right hand side) several times to get back to starting page:



Select **Status** (confirm by pressing the menu button).



Select **Hot water**.

The functional control is carried out as follows:

1. Withdraw hot potable water at the draw off point.

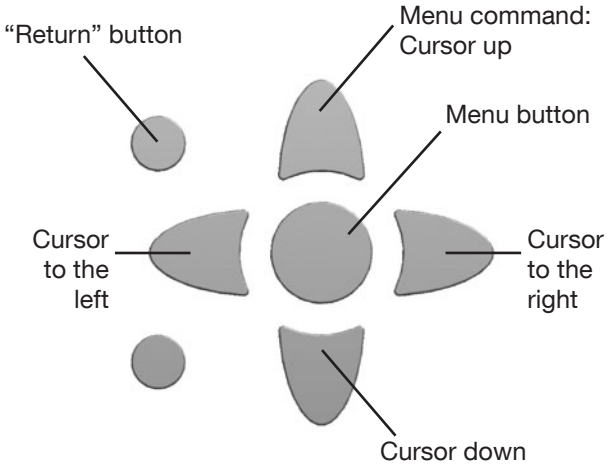
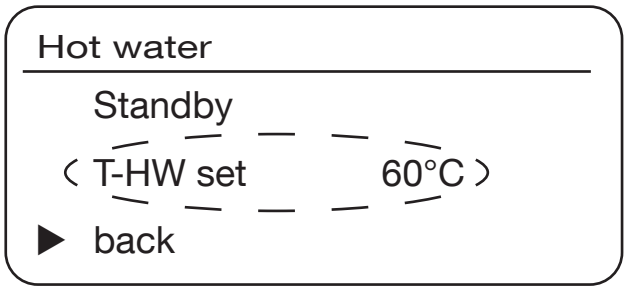
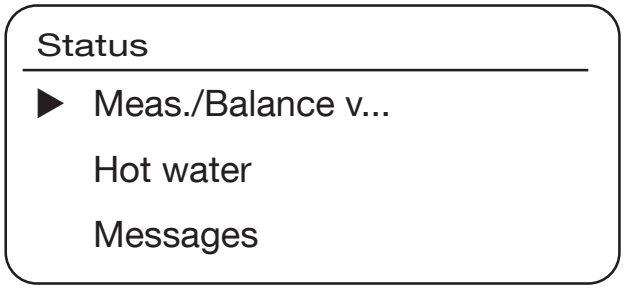


Fig. 4.19: Assignment of the menu keys of the controller

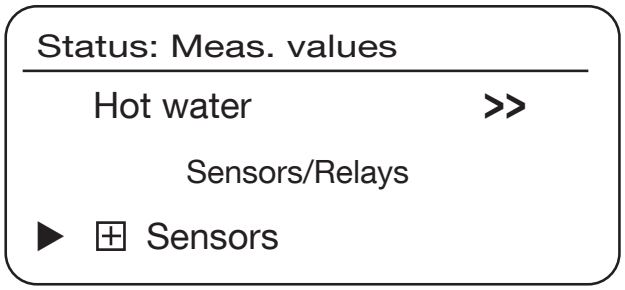
2. Select **back** (to menu Status).



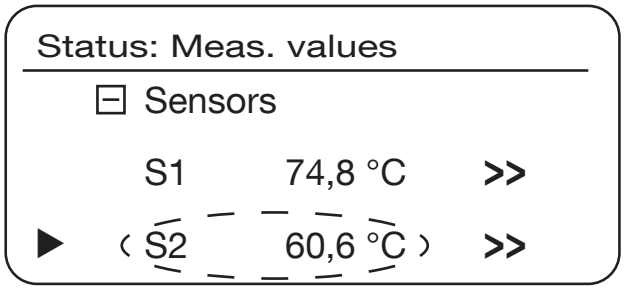
3. Select **Meas./Balance v...** in the menu Status.



4. Select **Sensors** in the submenu Meas. values.



5. **The current actual value of the hot potable water temperature sensor is displayed by the sensor S2.**



6. Compare the nominal temperature to the actual value. The example shows a successful functional control.
7. Stop draw off operation.

▶ Functional control is complete.

NOTE:

Once commissioning is complete, the **handover report** (sample form in the appendix) has to be filled in and signed. A copy must be handed over to the user of the system.

5. Malfunctions and remedial measures

5.1 Tabular overview

MALFUNCTION	CAUSE	REMEDY
Potable water is not heated (only cold water at the draw off points).	1. Flow sensor soiled/defective. 2. Controller deactivated (disconnected from the power supply). 3. Airlock in the storage cylinder circuit. 4. Pump in the storage cylinder circuit defective (pump not running when drawing off hot water).	1. Clean or replace flow sensor (see paragraph 5.3 on page 37). 2. Check power supply of the controller and connect to power supply if required. 3. Check correct positioning, function and open position of the airvents in the storage cylinder circuit (see paragraph 4.6.2 on page 23). 4. Check whether the pump is running when drawing off water and replace it if required.
The hot water temperature at the draw off point(s) drops.	1. Heating water temperature in the buffer storage cylinder too low. 2. Insufficient storage cylinder content.	1. Increase buffer storage cylinder temperature; check the capacity of the heat generator if required. 2. Increase storage cylinder content if required; check system design if required.
The water at the draw off point cools down suddenly during circulation operation.	Cold water enters the circulation pipe and not the heat generator.	Check function of the check valve in the circulation pipe (accessory) (see doc.no. 138159080), clean or replace it if required.
Target temperature is not reached, strange pump noises.	Small airlock in the storage cylinder circuit.	Check correct positioning, function and open position of the airvents in the storage cylinder circuit.
The target temperature is no longer reached if draw off capacities are higher.	1. Too low storage cylinder temperature for the required draw off capacities. 2. Heat exchanger soiled. 3. Heat exchanger calcified.	Increase heating water temperature in the storage cylinder (see characteristic lines in the appendix, see chapter 10). Clean heat exchanger by flushing it (see paragraph 5.2.2 on page 36). Decalcify heat exchanger (see paragraph 5.2.1 on page 30).
Menu button of the controller flashes red.	1.: Too low flow temperature (for thermal disinfection) **or:** 2.: Sensor error 2.1: Inadvertent activation of an additional function which is not required 2.2: Short circuit or broken cable	Select **controller menu “Status/Messages”** to identify the specific error. For 1.: Short-term increase of the water temperature in the buffer storage cylinder for thermal disinfection (to be programmed). For 2.1: Check and deactivate the additional function which is not required. For 2.2: Check all sensor resistances by comparing them to the resistance values in doc. no. 138158081; replace defective sensor if required.
Fresh water station switches to emergency operation if draw off capacities are low or during circulation operation (menu button of the controller flashes green).	Gravity circulation in the storage cylinder circuit.	Install isolation device (Oventrop accessory item no. 1381078, see paragraphs 3.4 on page 14 and 4.5 on page 22) into the return of the storage cylinder circuit.
The water drawn from the tap is hotter than usual during regular periods of use.	Wrongly set thermal disinfection intervals.	Thermal disinfection should be carried out overnight. Reprogramme thermal disinfection intervals via the controller menu (see separate controller document no. 138158081).
1. Water discharge or leakages at the outside of the heat exchanger. 2. Pressure increase in the storage cylinder circuit (potable water enters the storage cylinder circuit).The safety valve in the storage cylinder circuit opens.	Leakage at the heat exchanger due to corrosion which may result from a brazing material which does not match the potable water quality.	The heat exchanger must be replaced. The used brazing material has to match the potable water quality (see information sheet “Important advice regarding corrosion protection” in the appendix).
Too low discharge capacity at the draw off point.	Heat exchanger strongly calcified. Cold water pressure too low (wrongly set pressure reducer).	Decalcify the heat exchanger (see 5.2.1 on page 30). Check setting of the pressure reducers and increase if required.

5.2 Decalcification and cleaning of the heat exchanger

The following signs indicate a soiled or calcified heat exchanger.

1. With increasing draw off capacities, the temperature drops below the set value. The set potable water temperature is only reached with low draw off capacities.
2. The draw off capacity reduces.

▶ If theses symptoms arise, the potable water side should be decalcified (paragraph 5.2.1) or the storage cylinder circuit side of the heat exchanger should be cleaned (paragraph 5.2.2) by a specialist company.

WARNING

Danger to life due to electric shock!

There is a risk of electric shock if the fresh water station is energized during maintenance, repair or removal.

- Before starting work, **completely disconnect the controller from the power supply** and protect it against accidental restart.

Risk of scalding due to hot fluids!

Working on the product group during operation may lead to scalding in case of an uncontrolled escape of hot water or water steam.

- Before starting work, close the **four isolating ball valves** of the fresh water station (storage cylinder circuit and potable water circuit) and let the water in the station **cool down**.

Risk of burns from hot heat exchanger!

The heat exchanger may still be hot when starting work.

- Let the fresh water station cool down.

5.2.1 Decalcification of the heat exchanger (potable water side)

The potable water side of the heat exchanger can be decalcified

- in mounted condition
- in dismounted condition

Note regarding the decalcification of heat exchangers

Due to the high temperatures in the fresh water station, a calcification of the installed heat exchanger cannot be excluded in general. This especially applies when installing a circulation pipe.

5.2.1.1 Decalcification in mounted condition

In a first step, the **heat exchanger (3) is decalcified in mounted condition**. Please proceed as follows (as from step 3, the storage cylinder circuit is masked).

1. Completely **disconnect the controller from the power supply**.
2. **Close** the **isolating ball valves (12 and 13)** (potable water circuit) **and (16 and 21)** (storage cylinder circuit) (Fig. 5.1).
3. Unscrew the caps from the fill and drain ball valves (8 and 14) (Fig. 5.2).

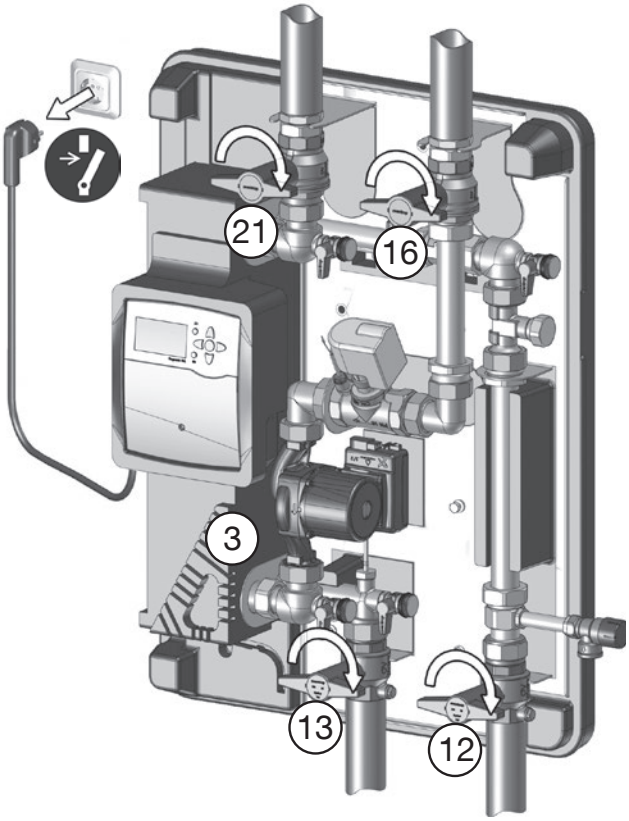


Fig. 5.1: Disconnect the controller from the power supply and close the ball valves

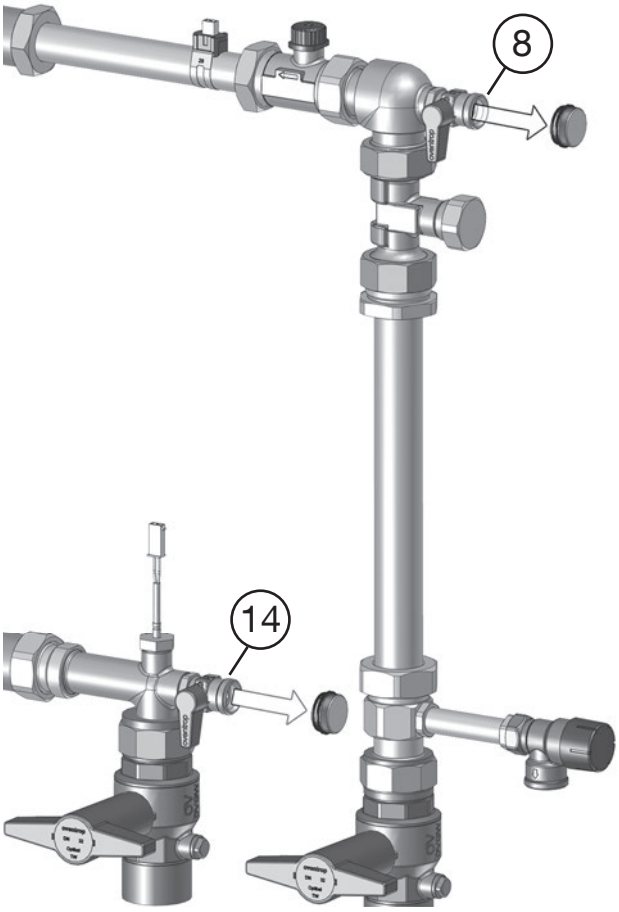


Fig. 5.2: Unscrew the caps from the fill and drain ball valves

4. Equip each fill and drain ball valve (8 and 14) with a flushing hose.

The direction of flow of the anti-liming agent must be observed. It must be **opposite** to the direction of flow of the potable water in the potable water circuit.

Only use a DVGW approved anti-liming agent, for instance an agent based on citric acid. The DVGW work sheets W 291 and 319 must be observed.

5. Open the **ball valves** (**8 and 14)** slowly to start the flushing process with anti-liming agent (Fig. 5.3).

The **action times** depend on the used **anti-liming agent**, which has to be warmed up if required. **The instructions of the manufacturer must be observed!**

6. Terminate the flushing process after the specified action time.
7. Drain the liquid with the flushed lime residues from the storage cylinder circuit and dispose of it.
8. If necessary, neutralize the potable water circuit, i.e. reflush it with lye, drain the liquid and dispose of it (the instructions of the manufacturer of the anti-liming agent must be observed).
9. Close the **upper fill and drain ball valve (8)** (see Fig. 5.3).
10. Remove both flushing hoses.

▶ The flushing process for decalcification is complete. The next step is to **reflush** the potable water circuit with water.

11. Connect the **drainage hose (A)** for potable water to the **lower fill and drain ball valve (14)** (Fig. 5.4).
12. Open the isolating ball valve (12) slightly to start the flushing process with potable water.
13. Close the fill and drain ball valve (14) after at least **one minute**.
14. Remove the drainage hose (A).
15. Refit the caps of the fill and drain ball valves (8 and 14).

▶ Decalcification of the potable water circuit with mounted heater exchanger is complete.

After decalcification of the heat exchanger, the fresh water station must be submitted to a **functional test** to check whether the measure was successful. The functional test is described under **paragraph 4.6.4**.

If the potable water temperature set at the controller is not reached during the functional test, the storage cylinder circuit side of the heat exchanger should be flushed in a further step (see paragraph 5.2.2).

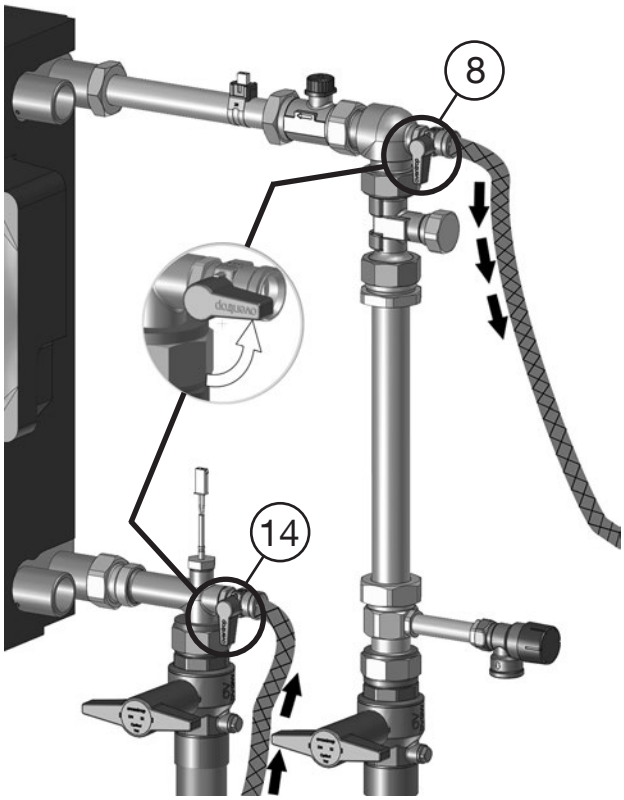


Fig. 5.3: Start the flushing process with anti-liming agent

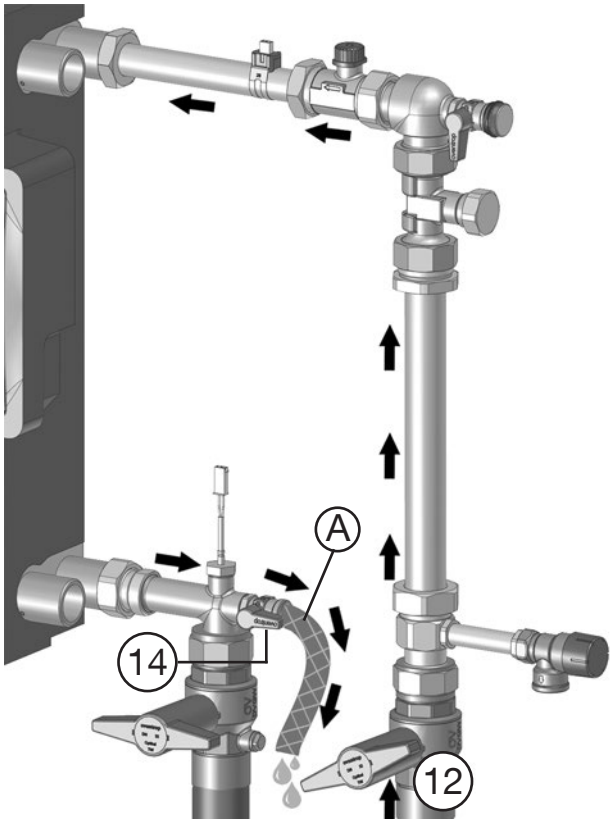


Fig. 5.4: Start the reflushing process with potable water

5.2.1.2 Decalcification of the heat exchanger in dismounted condition

1. Completely **disconnect the controller from the power supply**.
2. **Close** the **isolating ball valves (12 and 13)** (potable water circuit) **and (16 and 21)** (storage cylinder circuit) (see Fig. 5.1 on page 31).

CAUTION – Risk of scalding

There is still water inside the station. Let the water cool down before draining!

3. Unscrew the caps from the **fill and drain ball valves** (see Fig. 5.2 on page 31, pos. 8, 14, 19, 20).
4. Equip each of the lower fill and drain ball valves (14 and 19) with a **drainage hose (A)**.
5. Open the fill and drain ball valves (8, 14, 19 and 20) to drain the pipes and the heat exchanger (Fig. 5.5).
6. Loosen the four collar nuts of the heat exchanger with the help of a 46 mm spanner (Fig. 5.6).

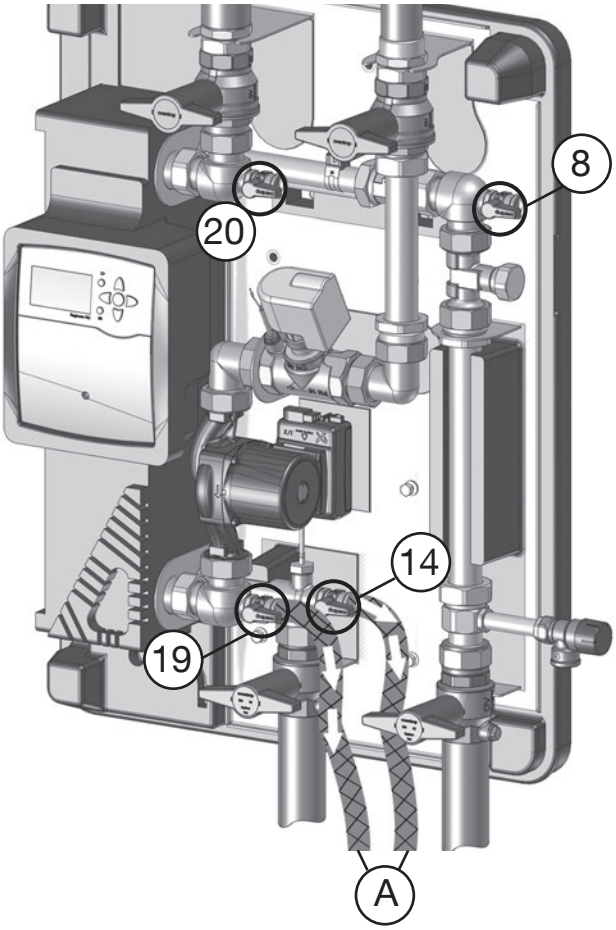


Fig. 5.5: Drain the pipes and the heat exchanger

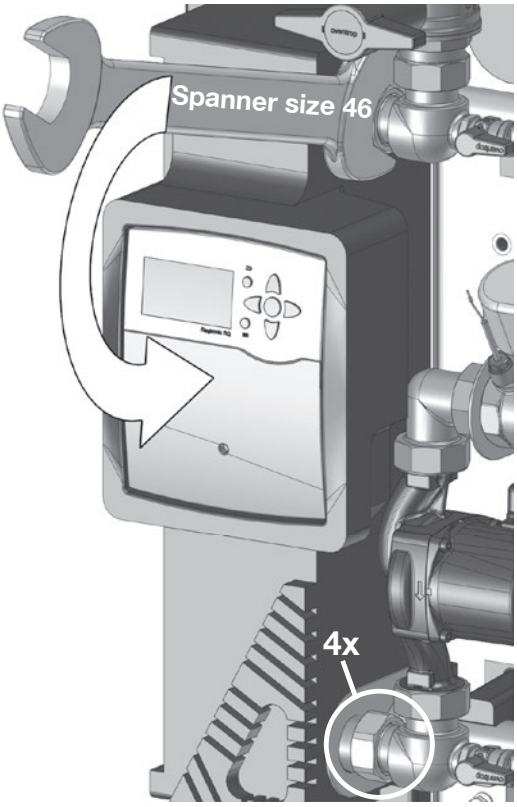


Fig. 5.6: Loosen the collar nuts of the heat exchanger

7. Remove the controller insertion block (2) with the controller (1) from the heat exchanger by carefully pulling it forward (Fig. 5.7).
8. Carefully remove the heat exchanger (3) from the two straps (5a) of the base plate (5) and lay it down on a level surface with the connections pointing upwards.

The cable connections (e.g. to the sensors) must not be detached.

9. Fill both sides of the heat exchanger up with anti-liming agent (Fig. 5.8).

The **action times** depend on the used **anti-liming agent**, which has to be warmed up if required. **The instructions of the manufacturer must be observed**

10. Drain the anti-liming agent and dispose it of.
11. If necessary, neutralize both sides of the heat exchanger, i.e. reflush it with lye, drain the liquid and dispose of it (the instructions of the manufacturer of the anti-liming agent must be observed).
12. Refit the heat exchanger into the fresh water station in the reverse order of removal.

Close the **fill and drain ball valves (8, 14, 19, 20)** before filling heating water into the station. Do **not** yet refit the caps.

13. **Open the isolating ball valve (16)**. Heating water enters the station (Fig. 5.9).
14. **Bleed** the storage cylinder circuit side by opening the **fill and drain ball valve (20)** until water escapes (Fig. 5.10).
15. Close the fill and drain ball valve (20) again.
16. Open the isolating ball valve (12) (PWC) **slowly** (Fig. 5.11).

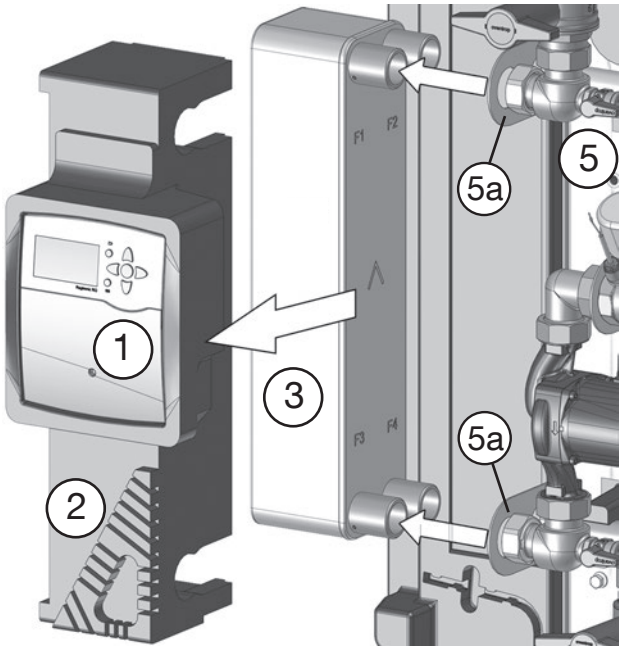


Fig. 5.7: Remove the controller insertion block and the heat exchanger

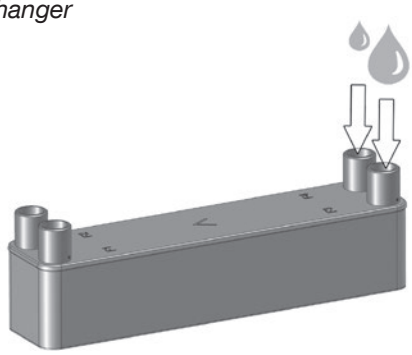


Fig. 5.8: Fill the heat exchanger up with anti-liming agent

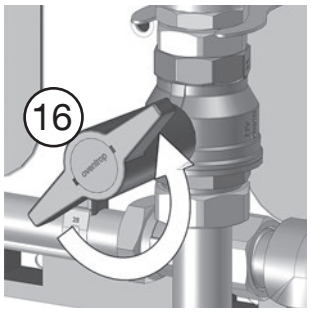


Fig. 5.9: Open the isolating ball valve in the supply of the storage cylinder circuit

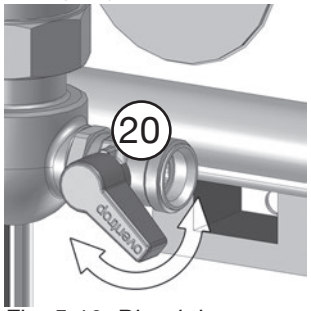


Fig. 5.10: Bleed the storage cylinder circuit side

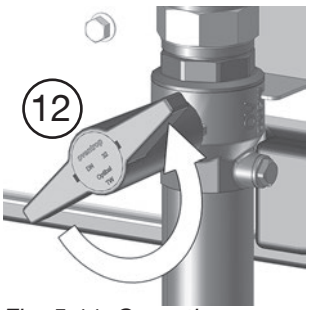


Fig. 5.11: Open the isolating ball valve PWC

17. Open the isolating ball valves (13 and 21) (Fig. 5.12).
18. Refit the caps of all fill and drain ball valves.

▶ Decalcification of the heat exchanger is complete.

After the complete decalcification of the heat exchanger, the fresh water station must be submitted to a **functional test** to check whether the measure was successful. The functional test is described under **paragraph 4.6.4**.

If the potable water temperature set at the controller is not reached during the functional test, the heat exchanger should be **replaced**.

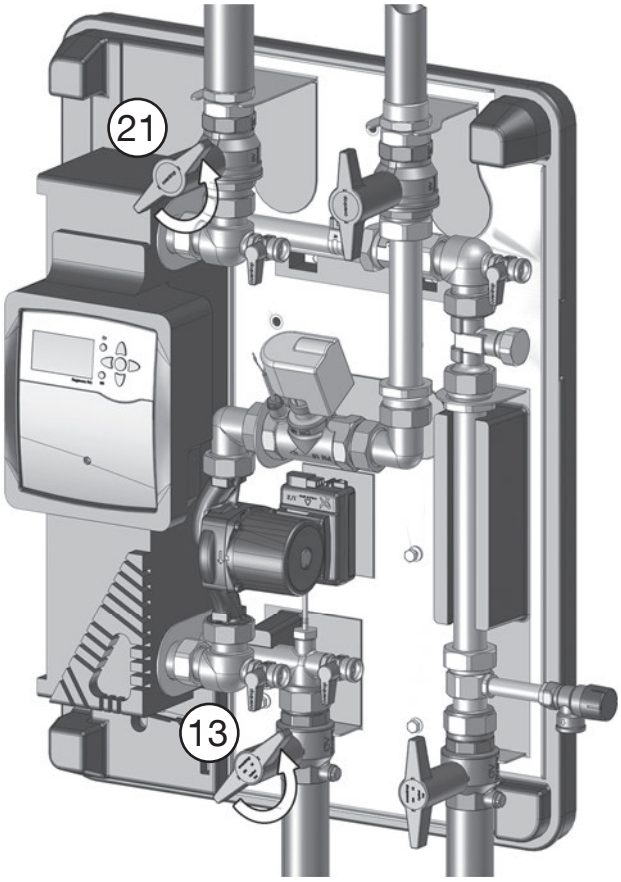


Fig. 5.12: Open the isolating ball valves (13) (PWH) and (21) (storage cylinder circuit return)

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

A loss of capacity as described above, cannot only be caused by a calcification of the potable water circuit side of the heat exchanger but also by impurities on the storage cylinder circuit side. This is why the storage cylinder circuit should also be flushed before replacing the heat exchanger.

CAUTION – Risk of scalding

There is still water inside the station. Let the water cool down before draining!

1. Completely **disconnect the controller from the power supply**.
2. **Close** the **isolating ball valves (12 and 13)** (potable water circuit) **and (16 and 21)** (storage cylinder circuit) (Fig. 5.13).
3. Unscrew the caps from the **fill and drain ball valves (19 and 20)**.
4. Equip both fill and drain ball valves (19 and 20) with a **flushing hose.**

The direction of flow of the flushing fluid must be observed. It must be **opposite** to the direction of flow of the water in the storage cylinder circuit.

5. Open both ball valves slowly to start the flushing process (Fig. 5.14) which should last at least **five minutes**.
6. Once flushing is complete, close both **fill and drain ball valves (19 and 20)**.
7. Remove both flushing hoses.
8. Refit the caps of the fill and drain cocks (19 and 20).
9. **Open the isolating ball valves (12, 13, 16 and 21)**.
10. Reconnect the fresh water station to the power supply.

▶ The flushing process for cleaning the storage cylinder circuit is complete.

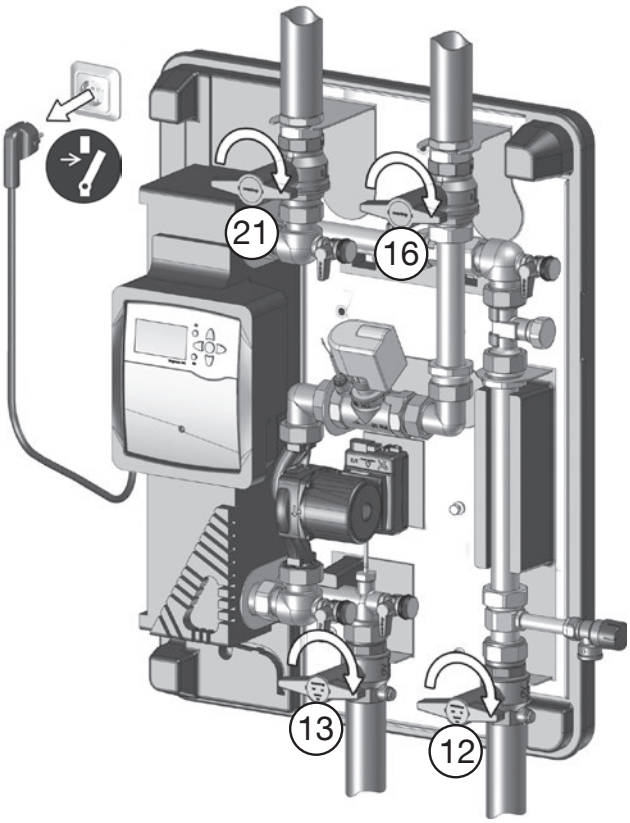


Fig. 5.13: Disconnect the controller from the power supply and close all isolating ball valves

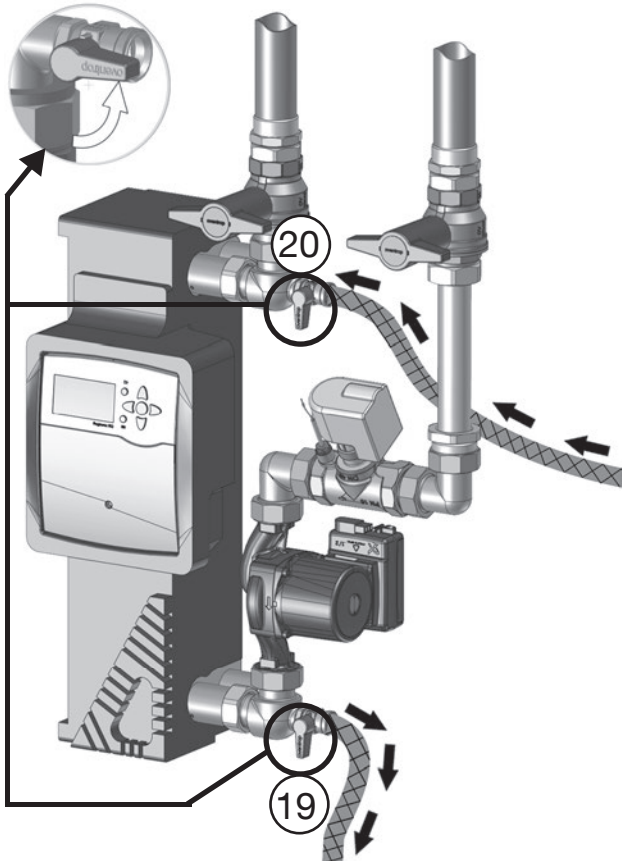


Fig. 5.14: Start the flushing process for cleaning the storage cylinder circuit

5.3 Cleaning of the flow sensor

A malfunction has occurred if no hot potable water is available at the draw off points. As shown in the malfunction table (see paragraph 5.1 on page 29), this may occur for several reasons. If easily determinable reasons, such as a disconnected controller an be excluded, the flow sensor (pos. 6 in Fig. 3.1 on page 9) should be checked for impurities.

If the sensor is soiled, the volume flow of the cold water supply (with or without circulation pipe) is no longer detected. A a result, draw off operations are no longer registered, the pump in the storage cylinder circuit is not switched on and no heat is transferred to the potable water circuit inside the heat exchanger.

1. Close the ball valves (12 and 13) (potable water circuit, see Fig. 3.1 on page 9).
2. Disconnect the flow sensor from the power supply by removing the mini-fit plug (MS) from the mini-fit socket (MB) of the controller.

The controller casing must not be opened as the mini-fit socket (MB) is located at the outside of the casing.

3. Loosen both collar nuts of the flow sensor with the help of a 46 mm spanner and release the sensor.
4. Remove the inner sleeve with measuring turbine (6a) from the sensor body (6).
5. Clean the sleeve with measuring turbine. Remove impurities, such as hemp residues, under running water. Hold the sleeve opposite to the flow direction of the running water.

NOTICE

Possible damage to the measuring turbine!

The internal measuring turbine is a sensitive component which can be easily damaged.

- Do not use pointed objects when cleaning the measuring turbine.
- After cleaning, please make sure that the turbine wheel can be turned easily (test it by blowing into the sleeve). If this is not the case, the flow sensor (6) must be replaced.

6. Refit the cleaned or replaced flow sensor in the reverse order of removal with due consideration of the correct **direction of flow** (towards the heat exchanger).
7. Carry out functional test as described under paragraph 4.6.4 on page 27.

▶ The flow sensor is excluded as reason for the malfunction.

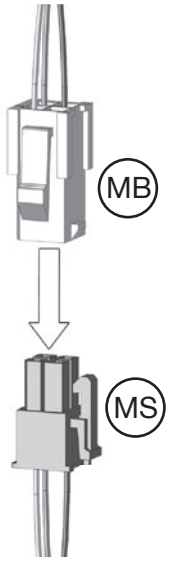


Fig. 5.15: Remove the mini-fit plug from the mini-fit socket

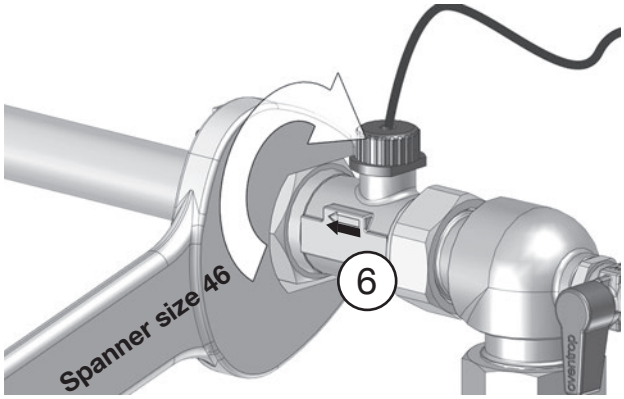


Fig. 5.16: Loosen the collar nuts of the flow sensor

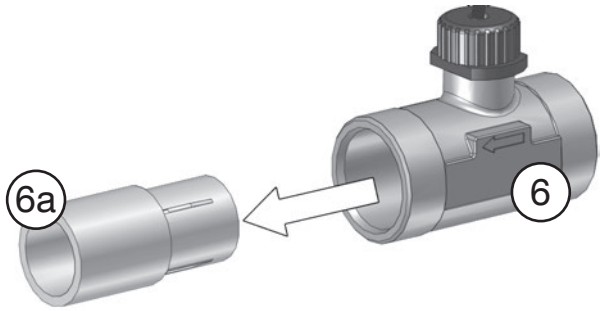


Fig. 5.17: Remove the internal sleeve

Fig. 5.18: Clean the measuring turbine under running water

6. Advice for the user

The user has to ask the qualified tradesman to inform him as to the safe and correct use of the fresh water station.

The trouble-free operation of the fresh water station has to be checked by the user of the system at least once a month. To do so, the menu button of the controller (1) has to be inspected visually. **The trouble-free operation is indicated by a green glowing ring around the menu button** (see Fig. 6.2).

If the ring **flashes red**, a malfunction has occurred and **the specialist company in charge is to be informed**.

A malfunction has, for instance, occurred if no hot potable water is available at the draw off points.

If the ring flashes red, the malfunction is also specified in the controller menu. The user can have the malfunction shown on the controller display in order to inform the specialist company about it if required.

Normally, the malfunction is displayed after having pressed any of the controller keys.

Should the malfunction not be displayed, press the “return” button (see Fig. 6.2) repeatedly to access the starting page:

Main menu
▶ Status
Hot water
Circulation

Select **Status** (confirm by pressing the menu button)

Status
Meas./Balance v...
Hot water
▶ Messages

Select **Messages**.

The following error messages can be displayed:

- **!Sensor fault S1 (... S8)**
- **T-store flow low** (Temperature of the storage cylinder supply too low)

Fig. 6.1: Position of the controller in the station

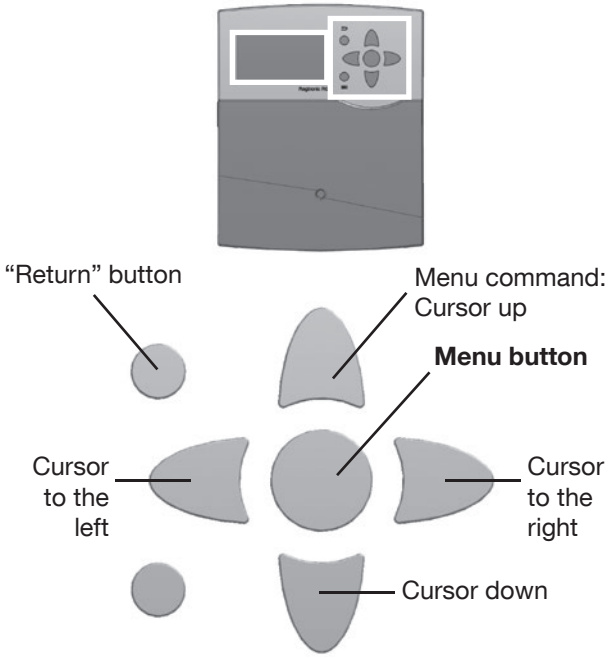


Fig. 6.2: Key assignment of the controller

The **safety valve (10)** of the station and of the external potable water circuit (not illustr.) has to be actuated by the user of the system every **six months**.

To to so, the plastic cap of the valve has to be turned anticlockwise until you hear a click (see Fig. 6.4).

Fig. 6.3: Position of the potable water safety valve at the station

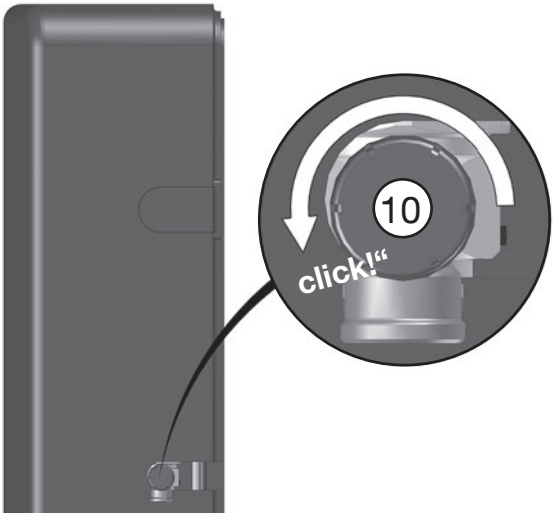


Fig. 6.4: Turn the safety valve anticlockwise

General information regarding the potable water temperature setting

A potable water temperature of 60 °C is set at the controller. On principle, the potable water temperature at the draw off points can be increased via the controller by the user of the system. As this temperature is detected by a sensor (see pos. 15 in Fig. 3.3 on page 10) at the hot water outlet of the heat exchanger, it is not identical to the hot potable water temperature at the draw off point. If the water temperatures at the draw off points shall be increased, the value **“T-HW set”** has to be **increased** via the controller menu, e.g. in steps of 5 °C. The exact procedure is described in the separate operating instructions of the controller (chapter “Settings”).

Legionella prophylaxis

Also and especially the user of the potable water installation has to be informed on the subject “legionella prophylaxis”. The longer the stagnation periods (i.e. no draw off operations) in the installation, the more this applies. The following rules should be known and strictly observed:

- Stagnation must be avoided, the potable water has to be exchanged at regular intervals.
- The potable water temperature at the hot water outlet of the heat exchanger must not drop below 60 °C.
- When operating a circulation system, it must be observed that the temperature difference between the hot water outlet of the heat exchanger (see above) and the circulation pipe re-directed into the station does not exceed 5 °C.

7. Maintenance

WARNING

Danger to life due to electric shock!

During some maintenance work, the controller has to remain in operation and is not disconnected from the power supply. Live components inside the controller casing.

- Do not open the controller casing during maintenance.

Risk of scalding due to hot fluids!

During some maintenance work, the station has to remain in operation. During this work there is risk of scalding in case of an uncontrolled escape of hot water or water steam.

- Wear safety goggles during maintenance.

Risk of burns at the heat exchanger!

The heat exchanger and all connection pipes are hot. The unprotected contact may lead to injuries.

- Wear safety gloves.

The fresh water station “Regumaq X-80” has to be service by a heating, gas and water specialist once a year. The maintenance activities have to be documented in the maintenance report being part of these installation instructions!

Before starting maintenance, the handover report completed during commissioning as well as the reports of the last maintenance intervals must be available.

Check system pressure

Compare the actual values in the storage cylinder and potable water circuit to the last maintenance or handover report.

- Difference in the potable water circuit: Readjust the pressure reducer.
- Too low a pressure in the storage cylinder circuit:
  Increase the water pressure, see paragraph 4.6.2 on page 23.
- Too high a pressure in the storage cylinder circuit: Possible corrosion inside the heat exchanger. A replacement might be necessary (the removal is detailed under paragraph 5.2.1.2 on page 33).

In case of a possible corrosion inside the heat exchanger, **it must be checked whether the brazing material of the heat exchanger is sufficiently resistant to the local water quality.** In this context, the **“Advice regarding corrosion resistance” (see paragraph 10.4 on page 55)** must be observed.

Leakage test (visual control)

Because of temporary temperature changes in the heating and potable water installation, the correct sealing function of the seals has to be checked at regular intervals.

- All connection points to the pipework and inside the station have to be checked for moisture. If necessary, couplings must be re-tightened or seals must be replaced.
- The heat exchanger has to be checked for moisture. Especially in connection with discolorations, damp zones indicate a corrosion calling for the replacement of the heat exchanger

Functional test of the safety valves (potable water circuit)

Normative guidelines which are defined in the DIN EN 806-5 standard, apply to the external safety valve and to the safety valve integrated in the fresh water station. The safety valves have to be checked every six months. The safety valves thus always have to be submitted to the functional test in the course of the annual maintenance. Within the year, this is the task of the user of the system (see chapter 6 on page 38).

Water sampling according to the German Potable Water Ordinance 2012

The heated potable water has to be sampled once a year in order to check the potable water hygiene in the installation and to provide evidence. Water sampling has to be carried out at the station.

For this purpose, a water sampling valve (PV, see OV accessory item no. 4209102) has to be connected to the hot water outlet of the heat exchanger at **connection 11**.

Note: Another sample has to be drawn at the most remote draw off point.

When installing an optional circulation pipe, a third water sampling valves has to be installed at the designated **connection K 1** (see Fig. 4.18 on page 26) and a sample has to be drawn.

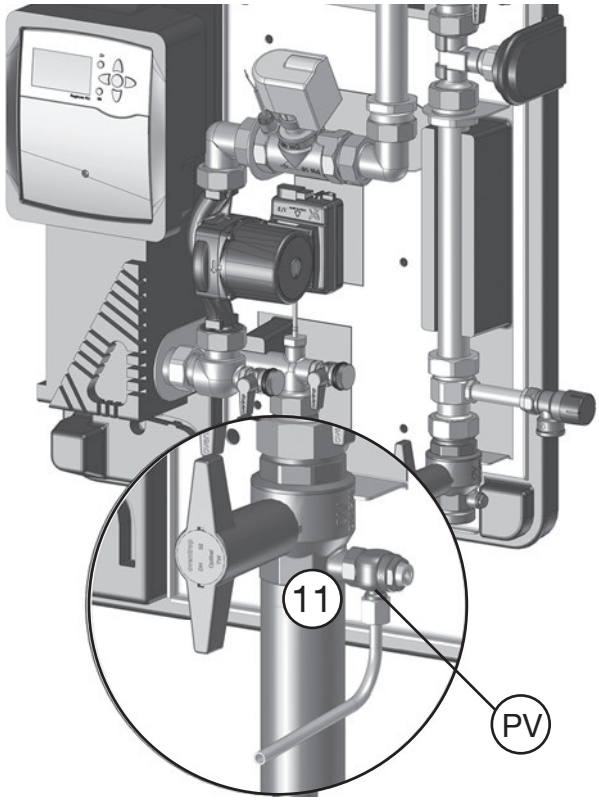


Fig. 7.1: Connection of the water sampling valve to the station

Actuation of the four isolating ball valves

Each time the installation is maintained, the four isolating ball valves (see Fig. 3.1 on page 9, pos. 21, 16, 13 and 12) have to be actuated to guarantee their faultless operation.

Electronic components and plug-in connections

Each time the installation is maintained, the electronic components connected to the station are to be checked for firm seating and integrity. Amongst others, this applies to:

- Cable plug-in connections of all components connected to the controller.
- Correct positioning of the temperature sensor PWC (7) according to Fig. 3.1 on page 9.
- Close connection of the actuator and the throttling valve (17).

Functional control of the check valve of the circulation set

When using a circulation set in a potable water installation, the correct functioning of the **check valve** (**S**, see Fig. 4.10 on page 21) has to be checked in the course of the annual maintenance. The procedure is described in the corresponding document of the potable water circulation set (doc. no. 138159080).

The annual functional control the check valve is prescribed according to DIN EN 806-5.

Replacement of the insert of the potable water filter

The potable water filter installed in the cold water supply of the station also has to be taken into account during maintenance. The **filter insert is to be replaced by a new one (item no. 6125101) every year**. This also applies to the second potable water filter installed in the optional circulation pipe.

The separate document of the potable water filter must be observed (doc. no. 612000882). The replacement is described in this document.

Performance test of the heat exchanger

The performance of the heat exchanger has to be checked in the course of the annual maintenance to make sure that it is not calcified and/or soiled.

To do so, the **functional control** at the controller described under paragraph 4.6.4 on page 27 has to be carried out. It must be observed that **hot water has to be drawn off simultaneously at several draw off points**.

Correct functioning of the fresh water station is guaranteed if the (actual) value of the hot potable water temperature sensor displayed by the controller is not more than 5 °C higher or lower than the nominal value set at the controller (e.g. 60 °C).

If the difference is higher than 5 °C, the heat exchanger should be cleaned and, if required, be decalcified. The procedure is described under paragraph 5.2 on page 30.

NOTE:
Once commissioning is complete, the **maintenance report** (sample form in the appendix) has to be filled in and signed. A copy must be handed over to the user of the system.

8. Decommissioning and disposal

WARNING

Danger to life due to electric shock!

The controller and station are energized during operation.

- Disconnect the controller from the power supply before **removing** the station.

WARNING

Danger from pressurised components!

The storage cylinder circuit and the potable water circuit of the station are pressurised. Risk of scalding in case of an uncontrolled escape of hot water.

- Isolate the supply pipes.
- Let the installation cool down.
- Drain the installation and the station.

After use or in case of irreparable defects, the fresh water station has to be **removed** and be **disposed of in an environmentally friendly manner** or its components have to be **recycled**.

1. Pull out the earthed plug to disconnect the station from the power supply.
2. Isolate the cold water supply pipe.
3. Isolate the storage cylinder circuit if ball valves are installed between the buffer storage cylinder and the station or drain the storage cylinder circuit.
4. Drain the station. To do so, connect drainage hoses (A) to the fill and drain ball valves (19 and 14) (see Fig. 8.1) and open the ball valves.
5. Open the fill and drain ball valves (20 and 8). If a circulation pipe has been installed, open the isolating ball valve (13), too.
6. Release all pipes.

Disposal

If not return or disposal agreement has been made, dismantled components are to be recycled:

- Metals are to be scrapped.
- Plastic parts are to be recycled.
- Depending on the material they are made of, other components are to be disposed of accordingly.
- Electronic components are dangerous and must only be disposed of by specialist companies.

Disposal with the standard waste is inadmissible!

CAUTION

Risk of injury in case of improper removal!

Stored residual energies, angular components points and edges at the outside and inside of the appliance may cause injuries

- The station must only be removed by a heating, gas and water specialist.
- Before starting work, make sure that there is enough space.
- Open and hard-edged components are to be handled with care.
- Make sure that the work place is tidy and clean. Loose components and tools lying around are hazardous.

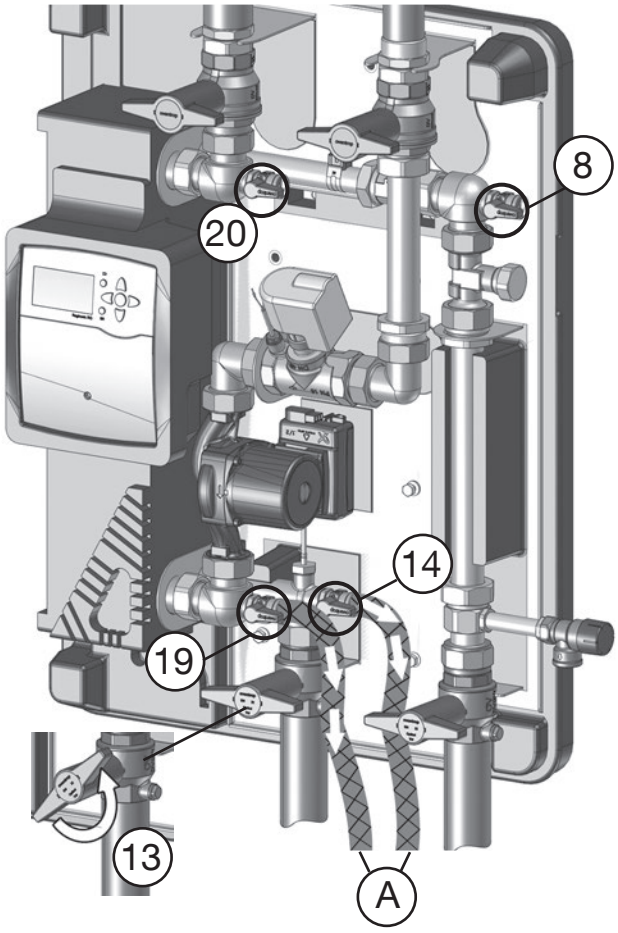


Fig. 8.1: Drain the storage cylinder circuit and the potable water circuit

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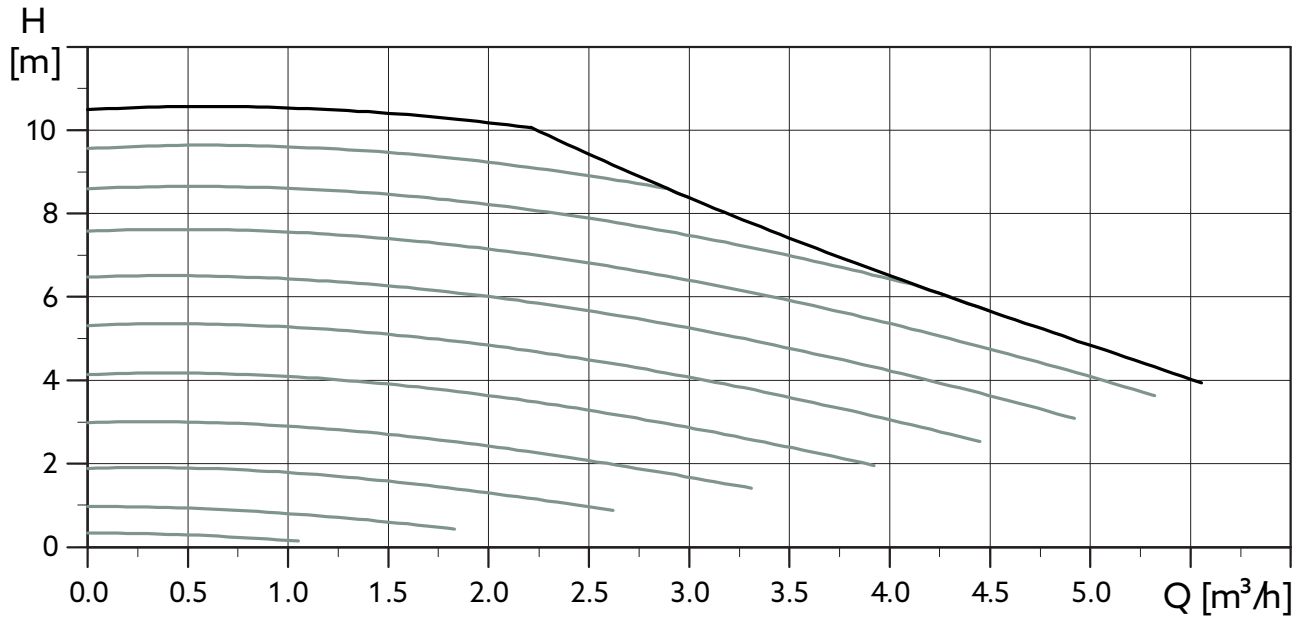
10. Appendix

10.1 Characteristic line for Grundfos circulation pump

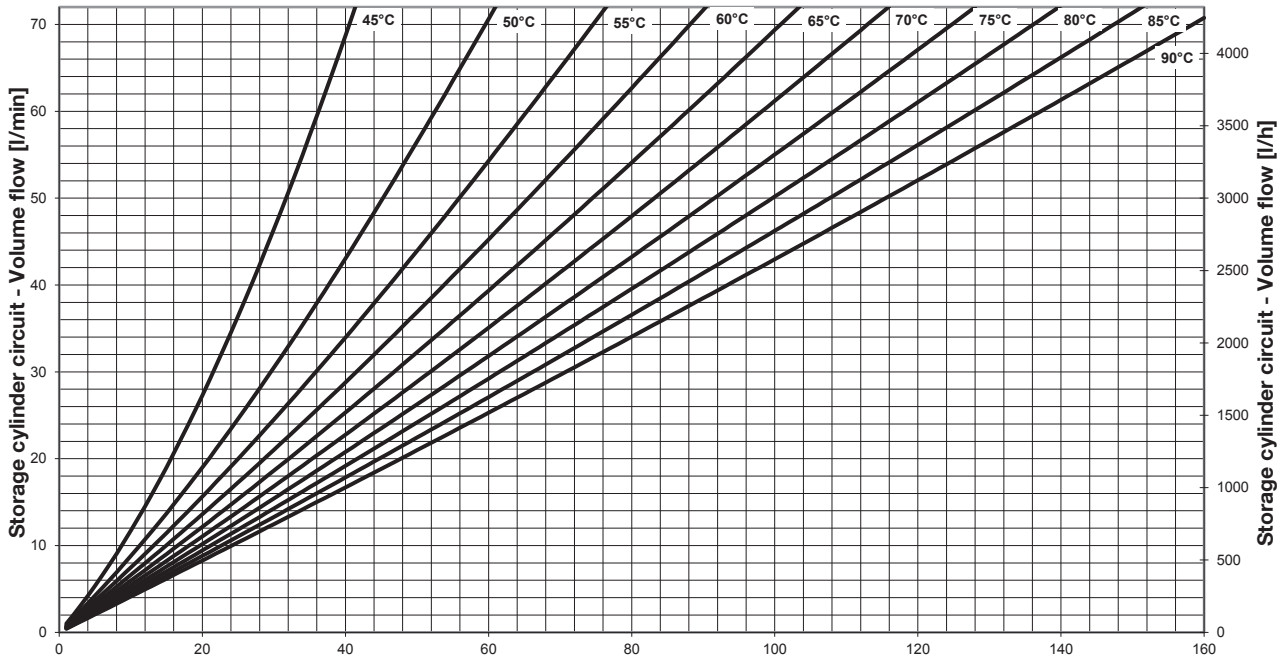


10.2 Characteristic lines for hot potable water preparation

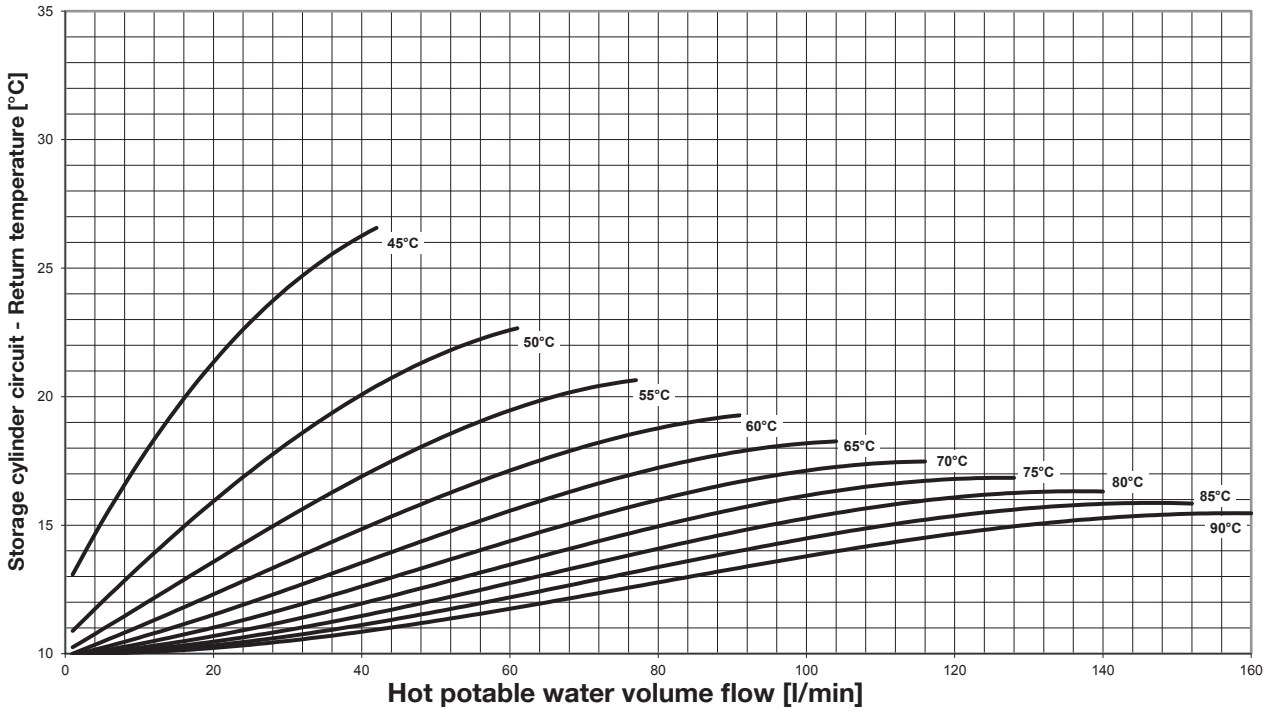
10.2.1 Heating of potable water from 10 °C to 45 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 45 °C -



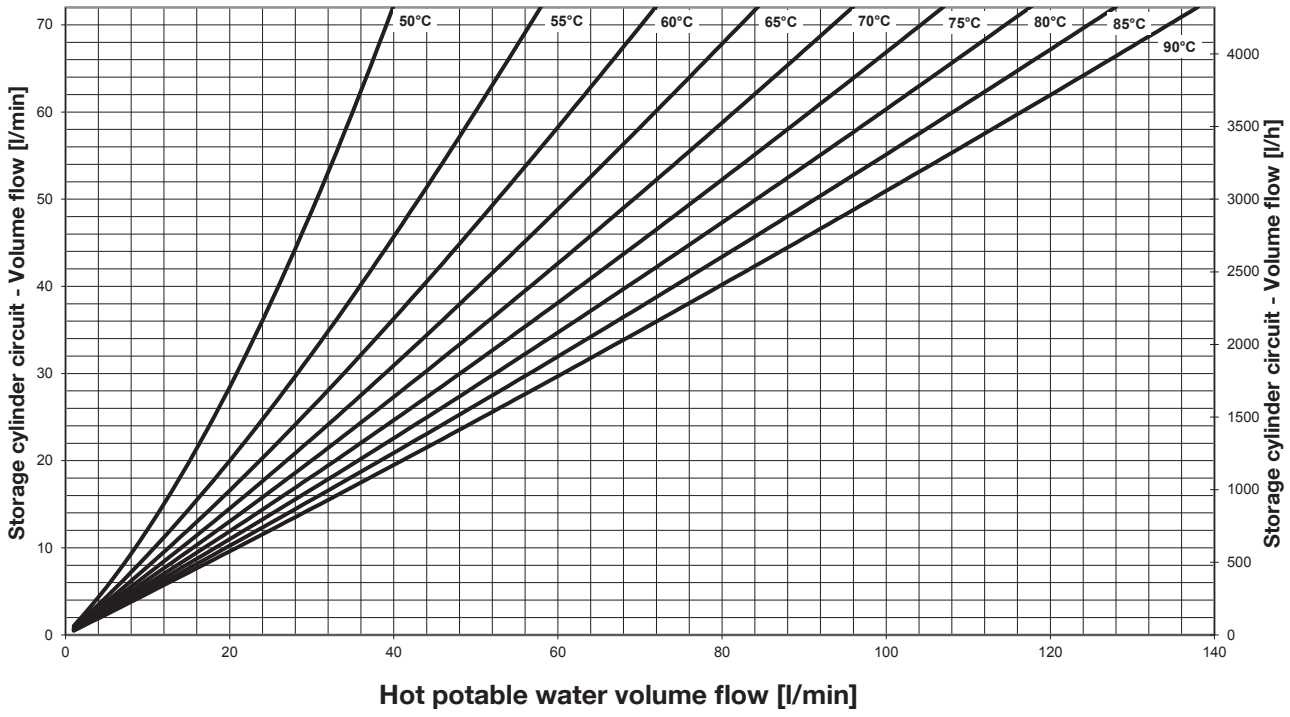
Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 45 °C -



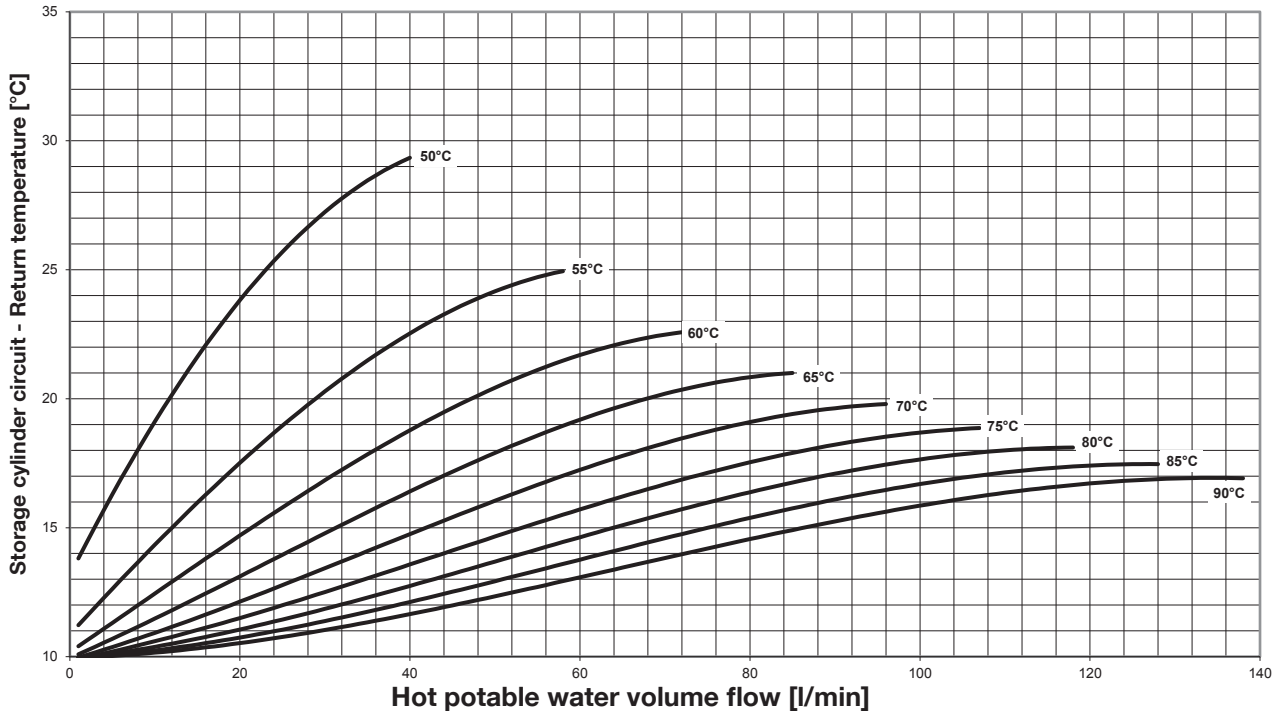
10.2.2 Heating of potable water from 10 °C to 50 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 50 °C -



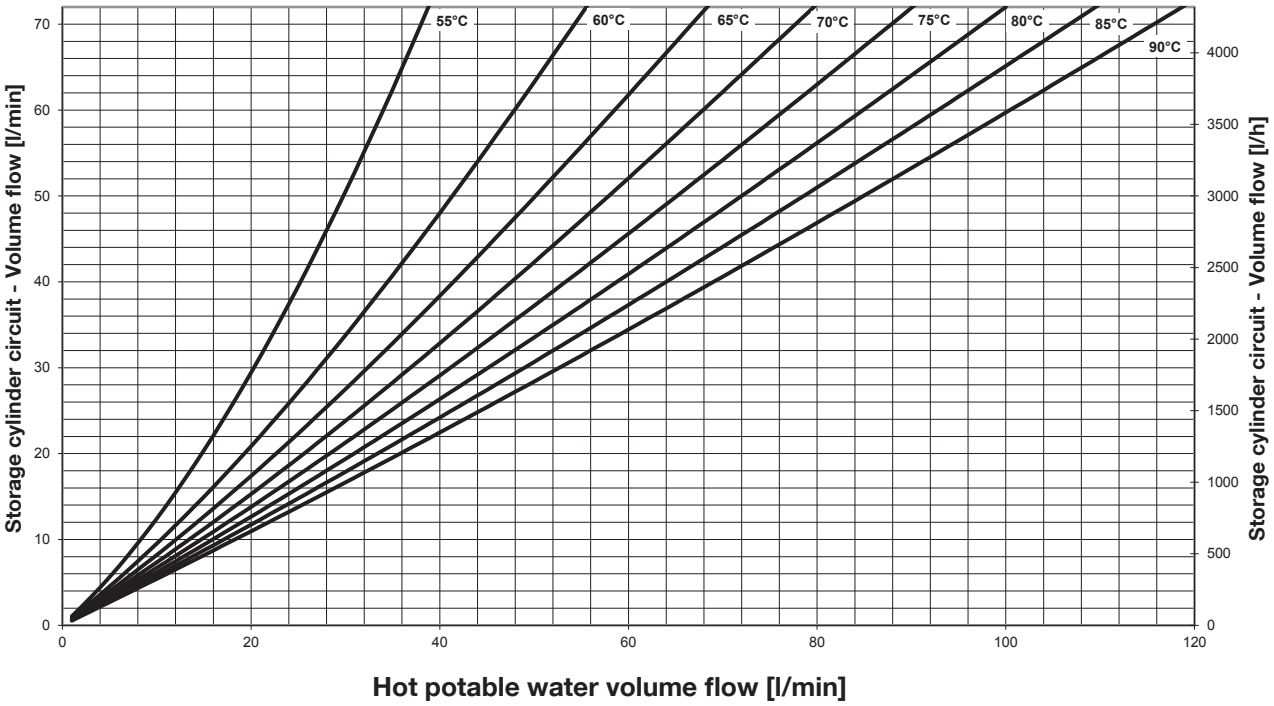
Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 50 °C -



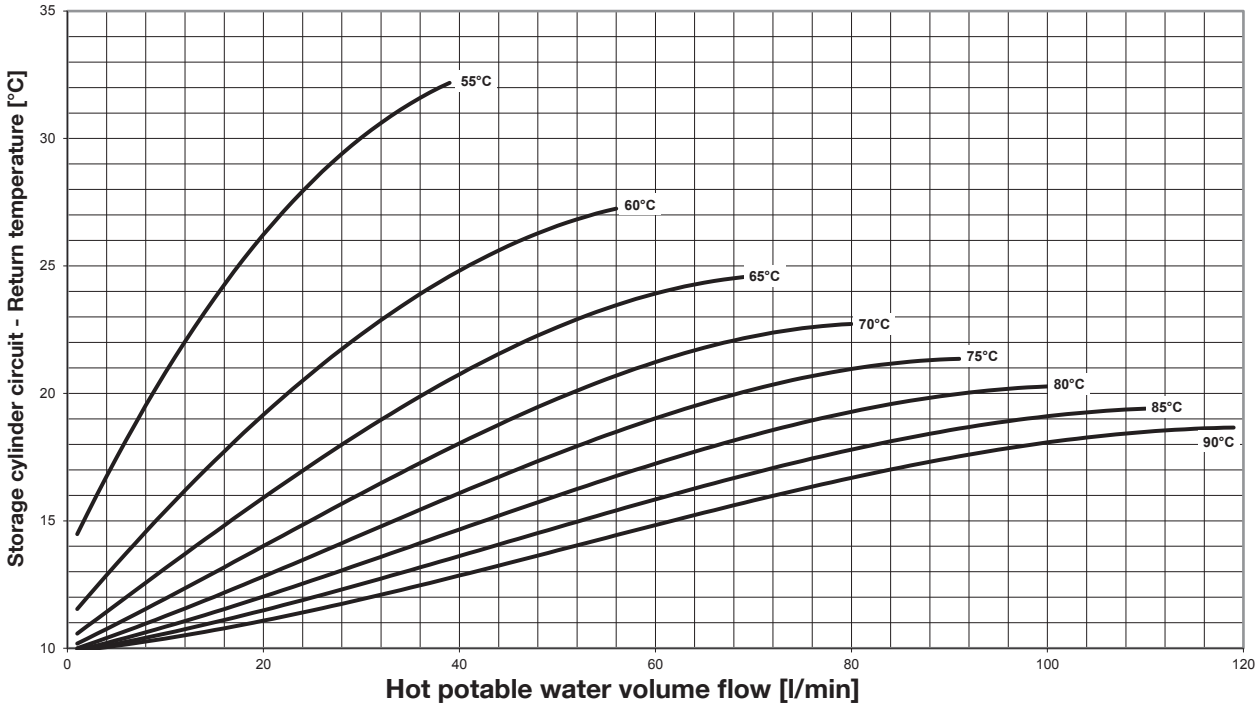
10.2.3 Heating of potable water from 10 °C to 55 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 55 °C -



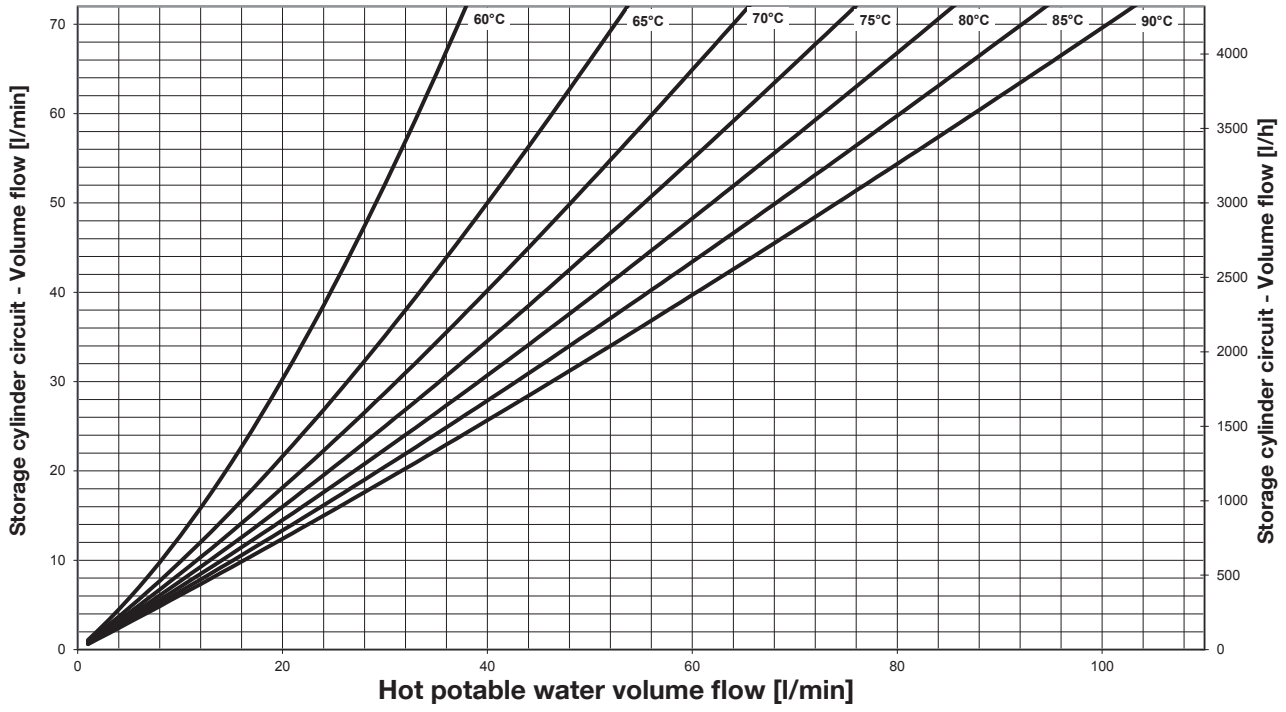
Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 55 °C -



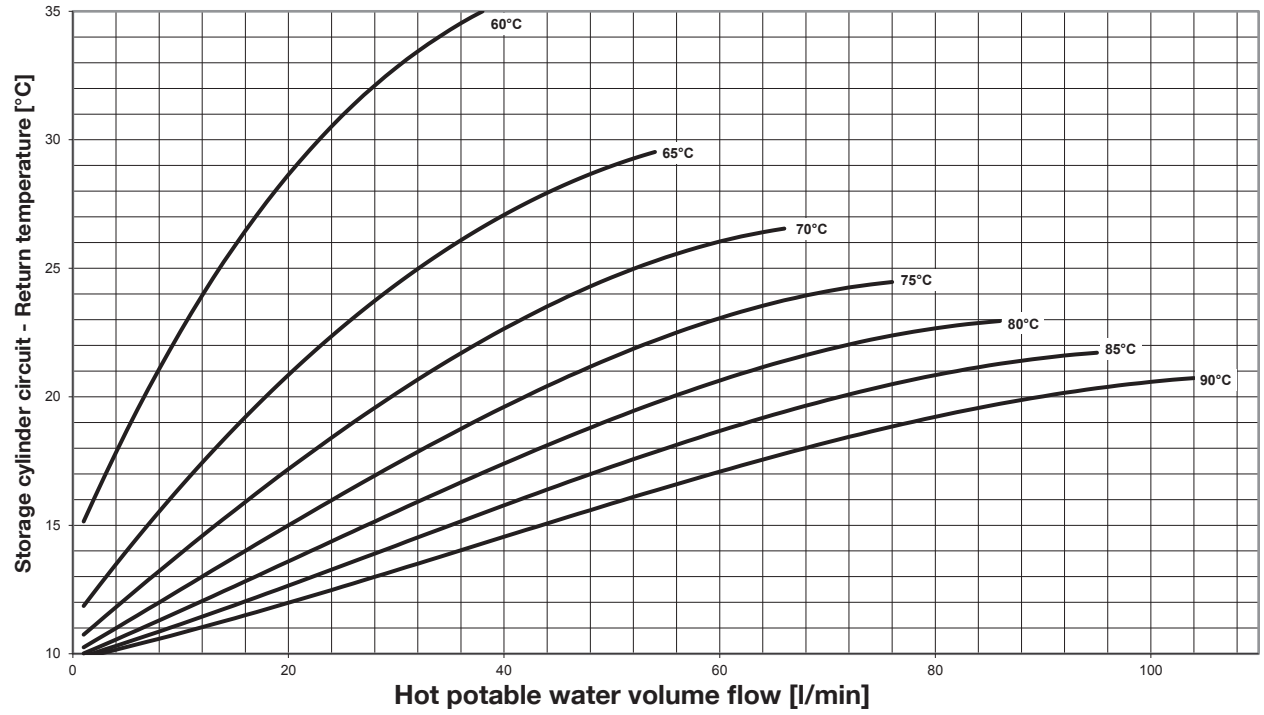
10.2.4 Heating of potable water from 10 °C to 60 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 60 °C -



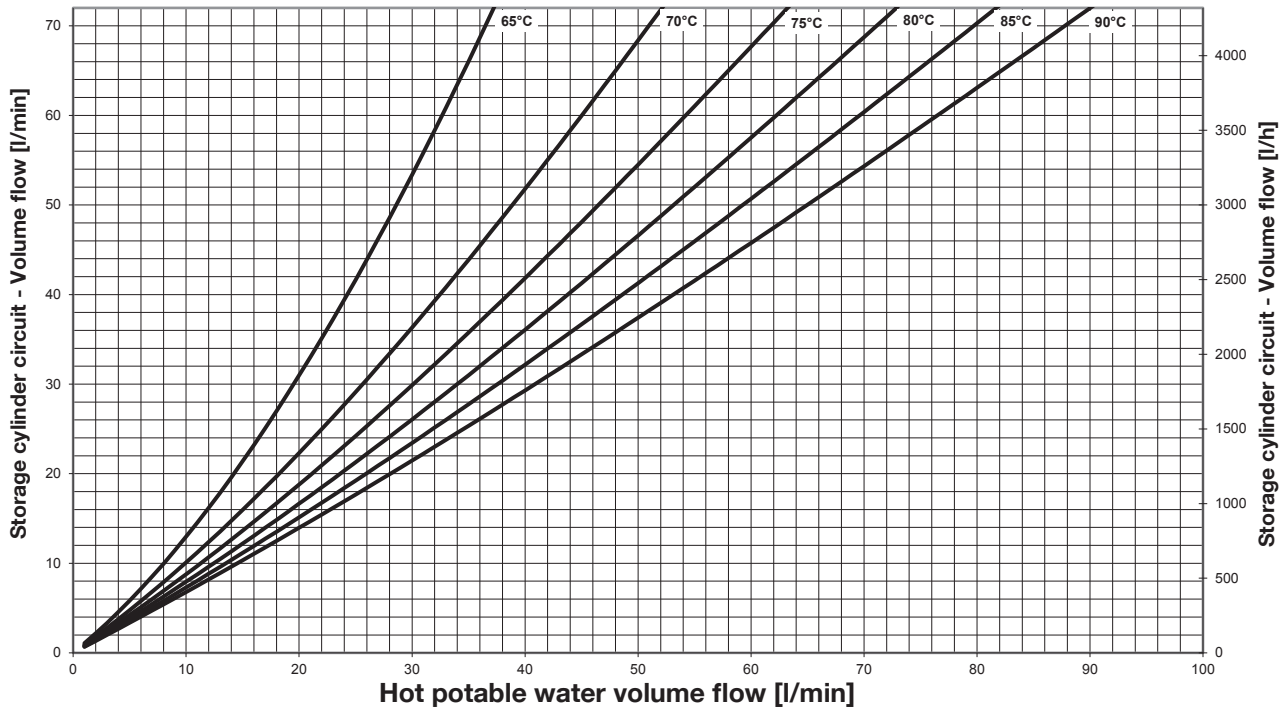
Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 60 °C -



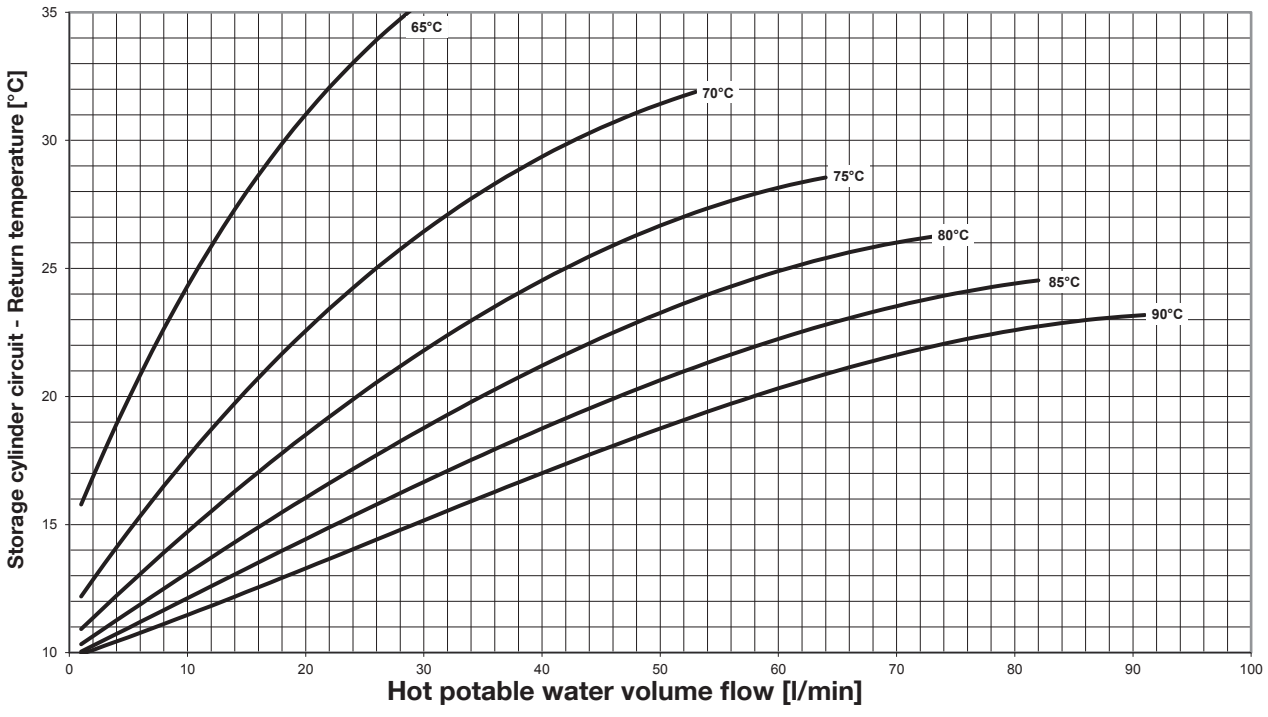
10.2.5 Heating of potable water from 10 °C to 65 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 65 °C -



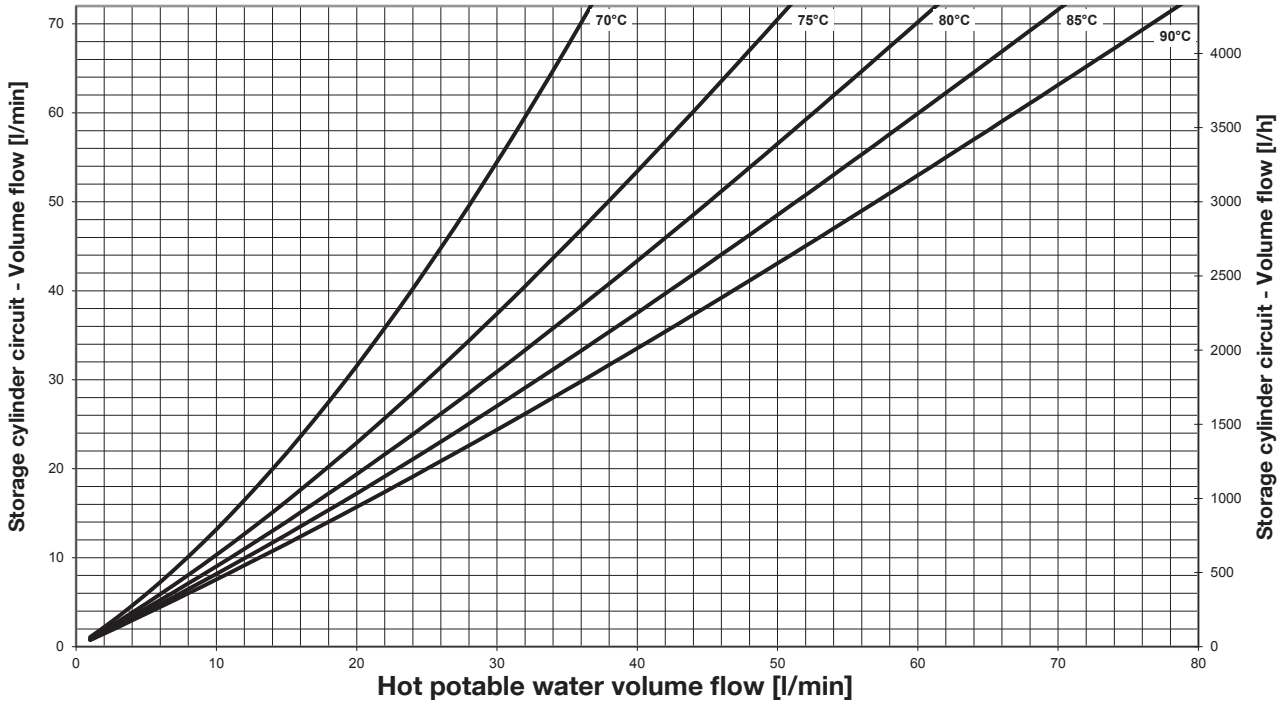
Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 65 °C -



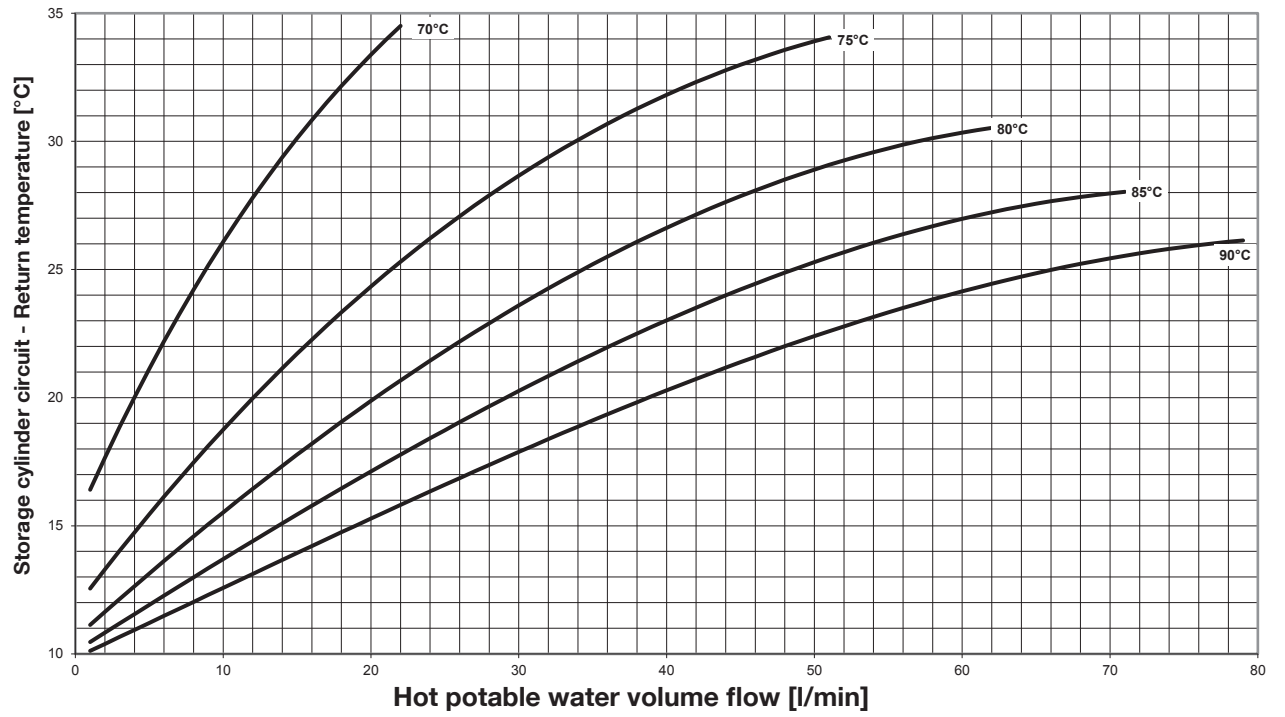
10.2.6 Heating of potable water from 10 °C to 70 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 70 °C -



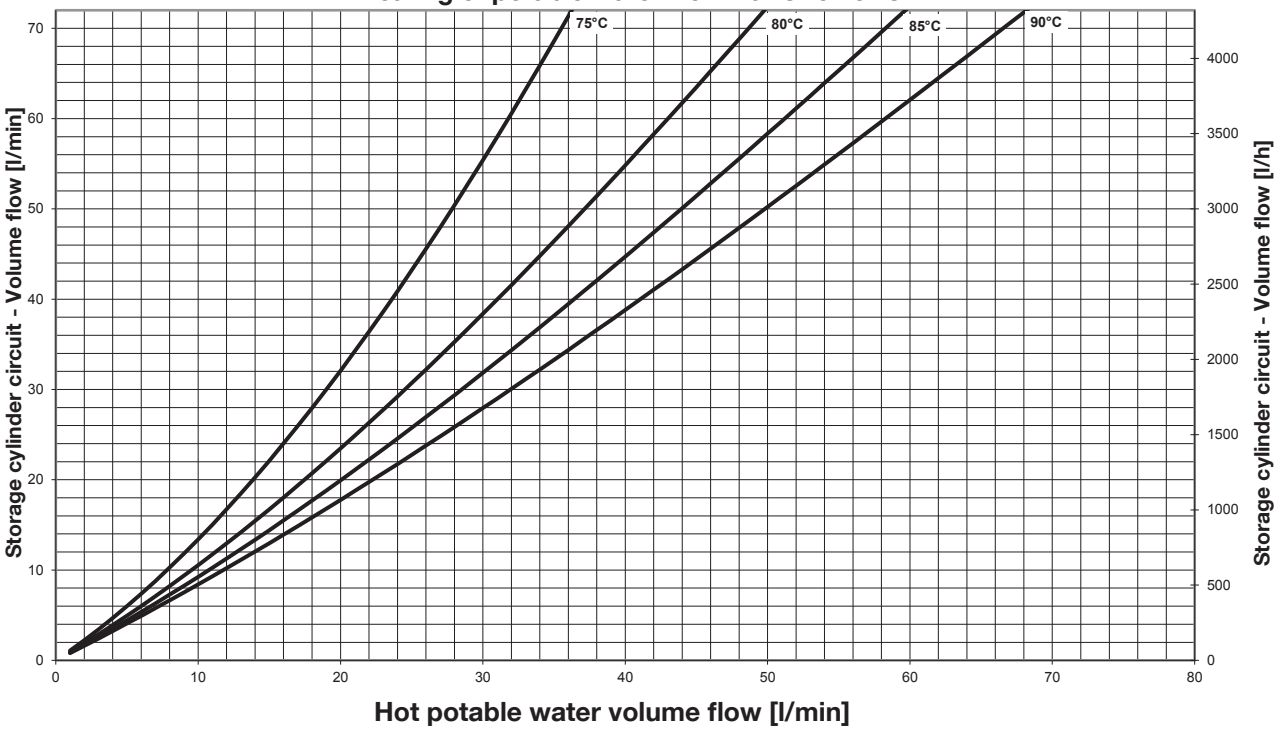
Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 70 °C -



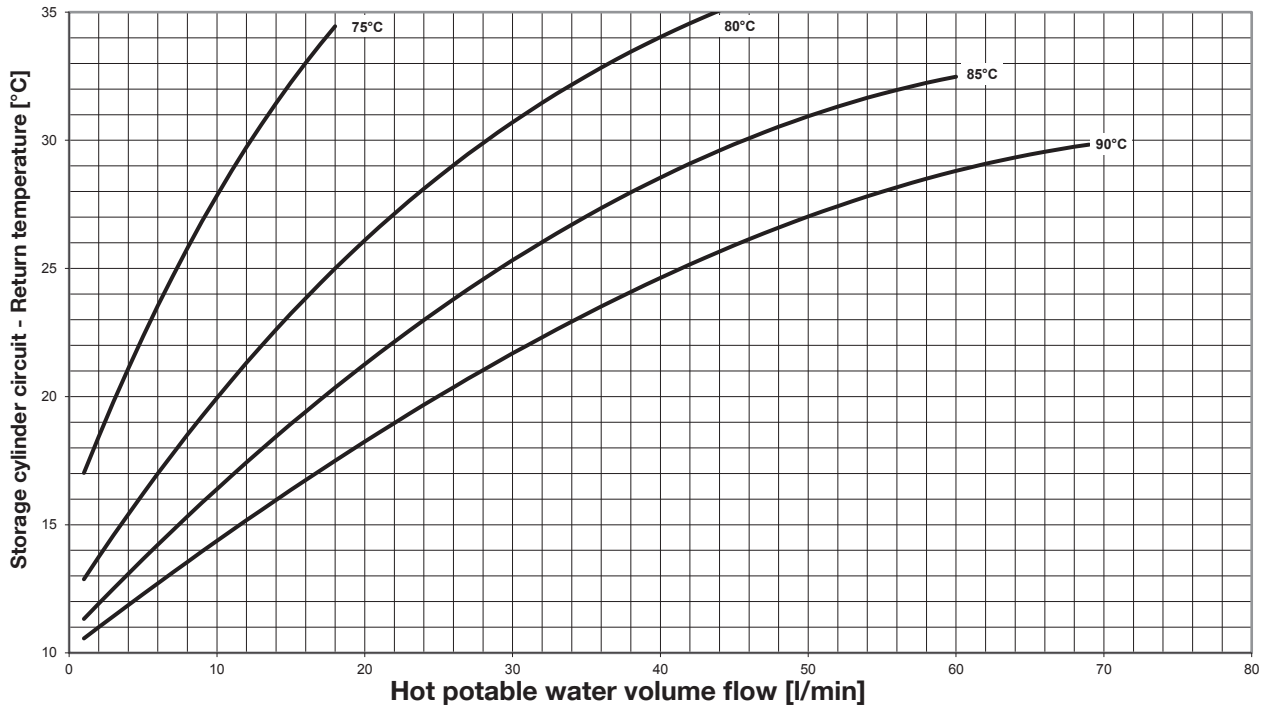
10.2.7 Heating of potable water from 10 °C to 75 °C

Performance data according to SPF test procedure.

Volume flow storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 75 °C -



Return temperature storage cylinder circuit at different flow temperatures
- Heating of potable water from 10 °C to 75 °C -



10.3 EU Declaration of conformity

EU Declaration of Conformity

oventrop

Product identification:	Fresh water station "Regumaq X-80"
Manufacturer:	Oventrop GmbH & Co. KG
Adress:	Paul-Oventrop-Straße 1 59939 Olsberg GERMANY
Authorised person for compiling the technical documentation:	Oventrop GmbH & Co. KG 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
1381580	copper brazed plate heat exchanger
1381582	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:

EN ISO 12100:2010
EN ISO 13732-1:2008
EN 60335-1:2012+AC:2014+A11:2014+A13:2017
EN 60335-2-51:2003 + A1:2008 + A2:2012
EN 60730-1:2011
EN 60730-2-9:2010
EN 60730-2-14:1997 + A11:2005 + A1:2001+ A2:2008

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 60730-1:2016
EN 55022:2010 + AC:2011
EN 61000-3-2:2014
EN 61000-3-3:2013

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, 06.05.2022
Signed for and behalf of:
Oventrop GmbH & Co. KG

i.V. .....
Hendrik Hössel
Head of Development

i.V. .....
Thomas Droste
Teamleader Systems

138158091

10.4 Advice regarding corrosion protection

oventrop Valves, controls + systems

EN

Fresh water and dwelling stations
Advice regarding corrosion protection

The materials used in the Oventrop fresh water and dwelling stations are selected and processed in accordance with strict quality specifications. The material used for the heat exchanger plates (stainless steel 1.4401) has proven its worth in potable water installations over a long time. **Depending on the water quality, especially in case of high chloride concentrations > 100 mg/l, leaks caused by corrosion** at the heat exchanger can, however, not be excluded.

For this reason, the specifying engineer and/or the user of the system have to make sure 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.

Consult your local water authority if necessary.

The below table shows limit values of substances in potable water when using heat exchangers with different **brazing materials** (copper, nickel or stainless steel).

It must be noted that **interactions** between certain substances in the water may have an adverse effect on the materials.

This concerns, amongst others, combinations of hydrogen carbonate with chloride and/or sulphate. (see next page).

The choice of a suitable heat exchanger therefore has to be carried out according to the water quality. Corresponding analyses can be obtained from your local water authority.

Demands on the water quality

		Stainless steel heat exchanger brazed with:		
SUBSTANCES	**CONCENTRATION** (mg/l or ppm)	**COPPER**	**NICKEL / STAINLESS STEEL**	**COPPER with Sealix® protective layer**
⚠ Chlorides (Cl^-) at 60 °C See chart on next page!	< 100 100 - 300 > 300	+ - -	+ - -	+ + 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 arise - Use not recommended			

The chemical composition of the potable water may be subjected to temporal fluctuations.

Special advice regarding corrosion protection

NOTICE

High fluid 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 installation manually or automatically at regular intervals if longer stagnation periods are to be expected continually (VDI/DVGW 6023).

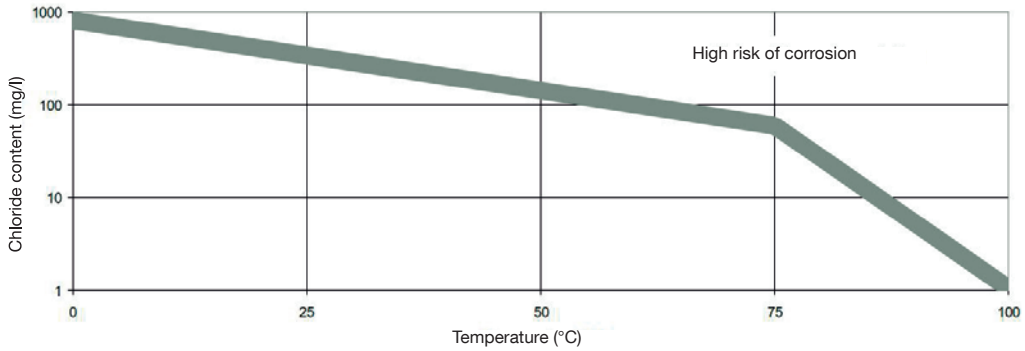
- Be careful in case of hydrogen carbonate/chloride combinations. **Low hydrogen carbonate contents combined with high chloride contents increase the risk of corrosion.**
- Be careful in case of hydrogen carbonate/sulphate combinations**. When using copper brazed heat exchangers, the hydrogen carbonate content in the water must not be lower than the sulphate content.** If this is the case, a nickel brazed, stainless steel brazed or a heat exchanger with protective layer has to be used.
- If the substances in the water are outside the indicated limit values, a **water treatment system** has to be installed, if required.

NOTICE

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

- **In case of mixed installations, the "flow rule" must be observed when using copper brazed heat exchangers in combination with galvanised steel pipes.** More detailed information can be obtained from the DIN EN 12502 standard.
- **Flush** all **supply pipes** before **installation** of the station (DIN EN 806-4), to remove any dirt particles and residues from the system**.**
- During **maintenance work** on the station, please consider that even **detergents may encourage corrosion of the heat exchanger**. In this context, observe the DVGW specifications, such as the work sheets W291 and W319.
- **When using a copper brazed heat exchanger without protective layer, the electrical conductivity of the water lies between 50 and 500 µS/cm**. Bear this in mind particularly in the context of water treatment according to VDI2035.

Premissible chloride content depending on the temperature



A heat exchanger with Sealix® protective layer minimises the risk of corrosion even in case of higher temperatures and chloride contents. Refer to the table “Demands on the water quality” for the respective limit values.

NOTICE

Corrosion and formation of stones in the system

► The specifying engineer and the user of the system are responsible for incorporating and evaluating substances and other factors in the water, which could influence corrosion and the formation of stones in the system. In critical water supply areas, the local water authority should be consulted.

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10.5 Handover report

Date:				
Installation location Address / building:				
Address of the user of the system:				
Address of the installer:				
Serial number "Regumaq X-80":				
Points which have not been carried out or been answered with "No" have to be justified in the field "Remarks"!		**Tick as appropriate or enter a value/ number**		**Remarks / Settings**
		Yes	**No**	
Installation potable water station				
01.	**Number of installed stations**			
02.	**Number of stations with circulation**			
03.	**Designation of circulation pump(s)**			
04.	**Installations with several stations**			
04.1	**Piping according to Tichelmann?**	☐	☐	
04.2	**Check valves in the potable water supply pipe (PWC)?**	☐	☐	
05.	**Additional safety valve of sufficient size in the potable water circuit?**	☐	☐	
06.	**System pressure potable water side**		**bar**	
07.	**Expansion tank in the potable water circuit?**	☐	☐	
08.	**System pressure storage cylinder side**		**bar**	
09.	**Storage cylinder side bled?**	☐	☐	
10.	**Functional control of deaerator(s)?**	☐	☐	
11.	**Capacity, nature and type of heat generator**		**kW**	
12.	**Storage cylinder content**		**l**	
13.	**Hydronic decoupling of the station(s)?**	☐	☐	
14.	**Expansion tank of sufficient size in the storage cylinder circuit?**	☐	☐	

Points which have not been carried out or been answered with “No” have to be justified in the field “Remarks”!		**Tick as appropriate or enter a value/ number**		**Remarks / Settings**
		Yes	**No**	
15.	**Nominal storage cylinder temperature set at the controller**		**°C**	
16.	**Isolation device against gravity circulation in the storage cylinder circuit?**	☐	☐	
17.	**All ball valves in the open position?**	☐	☐	
Controller settings				
01.	**Software version installed on the controller (shown on the controller display when connecting the controller to the power supply [Version X.XX])?**	**Version .**		
02.	**Correct basic settings (date, time, …)?**	☐	☐	
03.	**Set potable water temperature**		**°C**	
04.	**Circulation activated (see controller manual paragraph “Circulation”)?**	☐	☐	
04.1	**Activated mode**			
04.2	**Settings in this mode**			
05.	**Additional functions activated (see controller manual paragraph “Additional functions”)?**	☐	☐	
05.1	**Activated additional functions**			
	1.			
	2.			
	3.			
05.2	**Settings in the additional function(s)**			
	in 1.			
	in 2.			
	in 3.			
06.	**Controller equipped with an SD card for data recording?**	☐	☐	
07.	**Green glowing ring around the menu button?**	☐	☐	
08.	**Further modifications to the controller settings?**	☐	☐	

Points which have not been carried out or been answered with "No" have to be justified in the field "Remarks"!		**Tick as appropriate or enter a value/ number**		**Remarks / Settings**
		Yes	**No**	
Final control				
01.	**Installation submitted to a leakage test (DIN EN 806)?**	☐	☐	
02.	**Functional control according to installation instructions?**	☐	☐	

Information given to the user of the system / Handover

The installer informed the user of the system about

- the function and correct use of the fresh water station ☐

- the normal operation of a potable water installation ☐

The necessary documents were handed over to the user of the system ☐

Information on the normal operation of potable water installations:
- **Stagnation must be avoided, the potable water has to be exchanged at regular intervals**
- **The potable water temperature at the hot water outlet must not drop below 60 °C**
- **The circulation system has to be designed so that the potable water temperature is not undercut by more than 5 K compared to the outlet temperature of the station of 60 °C**
- **The potable water temperature at the cold water outlet must not exceed 25 °C**

Installer

_____

Date / Signature / Stamp

Handover report received (to be signed by the user of the system)

_____

Date / Signature

10.6 Maintenance report (sample form)

Date:				
Installation location Address / Building:				
Address of the user of the system:				
Address of the installer:				
Serial number "Regumaq X-80"				
Points which have not been carried out or been answered with "No" have to be justified in the field "Remarks"!		**Tick as appropriate or enter a value/ number**		**Remarks / Settings**
		Yes	**No**	
System information				
01.	**Number of installed stations**			
02.	**Number of stations with circulation**			
03.	**Designation of the circulation pump(s)**			
04.	**System pressure potable water side**	**bar**		
05.	**System pressure storage cylinder side** (Compare to handover report and observe malfunction table in case of deviations!)	**bar**		
06.	**Capacity, nature and type of heat exchanger**	**kW**		
07.	**Storage cylinder content**	**l**		
08.	**Nominal storage cylinder temperature set at the controller**	**°C**		
Maintenance work				
01.	**Station submitted to a leakage test (visual control)?**	☐	☐	
02.	**Electrical components checked for firm seating and integrity?**	☐	☐	
03.	**Safety valve submitted to a functional control (DIN EN 806-5)?**	☐	☐	
04.	**Check valve in the circulation pipe submitted to a functional control (DIN EN 806-5)?**	☐	☐	
05.	**Sampling of the potable water circuit for microbiologic test (German Potable Water Ordinance TrinkWV 2012)?**	☐	☐	
06.	**Heat exchanger checked for leaks to the outside?**	☐	☐	

Points which have not been carried out or been answered with “No” have to be justified in the field “Remarks”!		**Tick as appropriate or enter a value/ number**		**Remarks / Settings**
		Yes	**No**	
07.	**Heat exchanger submitted to a performance test?**	☐	☐	
08.	**Faultless operation of all ball valves checked?**	☐	☐	
09.	**Cleaning of all strainers installed on site?**	☐	☐	
10.	**All isolating valve in the open position?**	☐	☐	
11.	**Storage cylinder side bled and open position and function of airvents checked?**	☐	☐	
12.	**Controller settings compared to the values indicated in the handover report (modifications to be documented under “Remarks”)?**	☐	☐	
Software update (from 02. only has to be completed after having carried out a software update)				
01.	**Software updated (new software version to be documented)?**	☐	☐	**Version .**
02.	**Correct basic settings (date, time, …?**	☐	☐	
03.	**Set potable water temperature**		**°C**	
04.	**Circulation activated (see controller manual paragraph “Circulation”)?**	☐	☐	
04.1	**Activated mode**			
04.2	**Settings in this mode**			
05.	**Additional functions activated (see controller manual paragraph “Additional functions”)?**	☐	☐	
05.1	**Activated additional functions**			
	1.			
	2.			
	3.			
05.2	**Settings in the additional function(s)**			
	in 1.			
	in 2.			
	in 3.			

please detach

Points which have not been carried out or been answered with “No” have to be justified in the field “Remarks”!		**Tick as appropriate or enter a value/ number**		**Remarks / Settings**
		Yes	**No**	
06.	**Controller equipped with an SD card for data recording?**	☐	☐	
07.	**Green glowing ring around the menu button?**	☐	☐	
08.	**Further modifications to the controller settings?**	☐	☐	
Repair **(only has to be completed in case of a replacement of components)**				
01.	**Replaced component**			
01.1	**Reason for the replacement**			
02.	**Replaced component**			
02.1	**Reason for the replacement**			
03.	**Replaced component**			
03.1	**Reason for the replacement**			
04.	**Functional control according to installation instructions after repair?**	☐	☐	

Information given to the user of the system / Handover

The installer informed the user of the system about

- the function and correct use of the fresh water station ☐

- the normal operation of a potable water installation ☐

The necessary documents were handed over to the user of the system ☐

Information on the normal operation of potable water installations:
- Stagnation must be avoided, the potable water has to be exchanged at regular intervals
- The potable water temperature at the hot water outlet must not drop below 60 °C
- The circulation system has to be designed so that the potable water temperature is not undercut by more than 5 K compared to the outlet temperature of the station of 60 °C
- The potable water temperature at the cold water outlet must not exceed 25 °C

Installer

_____

Date / Signature / Stamp

Maintenance report received (to be signed by the user of the system)

_____

Date / Signature

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Subject to technical modifications without notice.

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