Installation and operating manual EN

AQA basic

Simplex Water Softening Unit

Changes reserved!

1-510444 / 12026 / 2018-08 / © BWT Wassertechnik GmbH / Printed in Germany

For You and Planet Blue.

BWT
BEST WATER TECHNOLOGY

Thank you very much for the confidence that you have shown in us by purchasing a BWT appliance.

BWT
BEST WATER TECHNOLOGY

Table of Contents

EN

1 Safety Instructions

1.1 General safety instructions

The product was manufactured according to all recognised regulations and technical standards and was in compliance with the relevant legal requirements when it was put into circulation.

Nevertheless, it can pose a risk of personal injury or property damage if you do not observe this chapter and the safety instructions throughout this documentation.

- Read this documentation thoroughly and in full before working with the product.
- Retain the documentation in such a way that it is accessible to all users at all times.
- Always hand over the product to third parties together with the full documentation.
- Follow all of the instructions in relation to the proper handling of the product.
- If you detect damage to the product or the mains supply, stop its operation and notify a service technician immediately.
- Use only accessories, spare parts and consumable materials that have been approved by BWT.
- Adhere to the environmental and operating conditions specified in the “Technical data” chapter.
- Use your personal protective equipment. It ensures your safety and protects you from injury.
- Only perform tasks that are described in these operating instructions or if you have been trained to do so by BWT.
- Perform all tasks in compliance with all applicable standards and provisions.
- Instruct the operator in the function and operation of the product.
- Instruct the operator in the maintenance of the product.
- Instruct the operator in relation to potential dangers that may arise while operating the product.

1.2 Scope of the documentation

This documentation applies exclusively to the product the production number of which is listed in chapter 12 “Technical Data”.

This documentation is intended for operators, installers without training from BWT, installers with training from BWT (e.g. drinking water specialists), and BWT service technicians.

This documentation contains important information for fitting the product safely and properly, starting up, operating, using, maintaining, and disassembling the product, and for correcting simple faults independently.

Read this documentation in full before working with the product. Pay particular attention to the chapter “Safety Instructions”.

1.3 Personnel qualifications

The installation work described in these instructions requires basic knowledge of mechanics, hydraulics and electrical systems as well as knowledge of the corresponding specialist terms.

To ensure that the device is installed safely, this work must be performed only by a qualified specialist or a trained person under the guidance of a qualified specialist.

A **qualified specialist** is anyone who can assess the work assigned to him or her, identify potential risks, and take suitable safety measures thanks to his or her specialist training, knowledge and experience as well as his or her knowledge of the applicable regulations. A qualified specialist must comply with the applicable specialist regulations.

An **instructed person** is anyone who has been instructed and, if necessary, trained by a qualified specialist in the transferred tasks and the potential risks presented by improper behaviour and who has been educated about the necessary protective equipment and measures.

1.4 Transport and installation

To avoid damage during transport to the installation location, do not remove the BWT product from the packaging until you have reached the relevant location. Then dispose of the packaging in the correct manner. Check that the delivery is complete.

If there is a risk of frost, drain all components that convey water.

Lift or transport the product or its components only from the designated suspension eyes or attachment points, if present.

The product must be installed or mounted on a sufficiently strong and level horizontal surface and must be adequately secured against falling or tipping.

1.5 Symbols used

	This symbol indicates general risks due to the mains voltage. Risk of death by electric shock!
	This symbol indicates that this electrical and electronic equipment must not be disposed of with household waste at the end of its life.
	This symbol indicates that the product can be recycled at the end of its life.
	This symbol indicates information or instructions that you must observe in order to ensure safe operation.

1.6 How safety instructions are displayed

In this document safety instructions precede any sequence of actions that could cause harm to persons or damage to property. All hazard prevention measures must be followed.

Safety instructions are displayed as follows:

⚠ SIGNAL WORD!

Source of hazard (e.g. electric shock)

Type of hazard (e.g. risk of fatal injury)!

- ► **Escape or prevent hazard**
- ► **Rescue measure (optional)**

Signal word / colour	Indicates the severity of the hazard
Warning symbol	Calls attention to the hazard
Source / type of hazard	Indicates the type and the source of the hazard
Consequences of hazard	Explains the consequences of not following the safety instructions
Hazard prevention measure	Explains how to avoid the hazard

Signal word	Colour	Severity of the hazard
DANGER		**High-risk hazard.** Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING		**Hazard with a moderate degree of risk.** Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION		**Low-risk hazard.** Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

1.7 Product-specific safety instructions

In the following sections, you will find product-specific safety instructions whenever you must perform certain safety-relevant actions on the device.

⚠ DANGER!

Electrical hazard!

Contact with live components will cause electric shock.

► **Unplug device before any service and repair works.**

1.8 Important notes on water-softening systems

The unit must be installed as described in the installation guide in compliance with the general requirements for the supply of water in Germany ["AVB Wasser"] V, section 12.2 by a water supply company or by a party registered in the water supply company's index of fitters.

In accordance with TrinkwV § 16 and § 21 (German drinking water ordinance), notify residents of the installation of the water softening system, and explain how it works and which regenerative is used.

Using treated drinking water with plants and aquatic animals

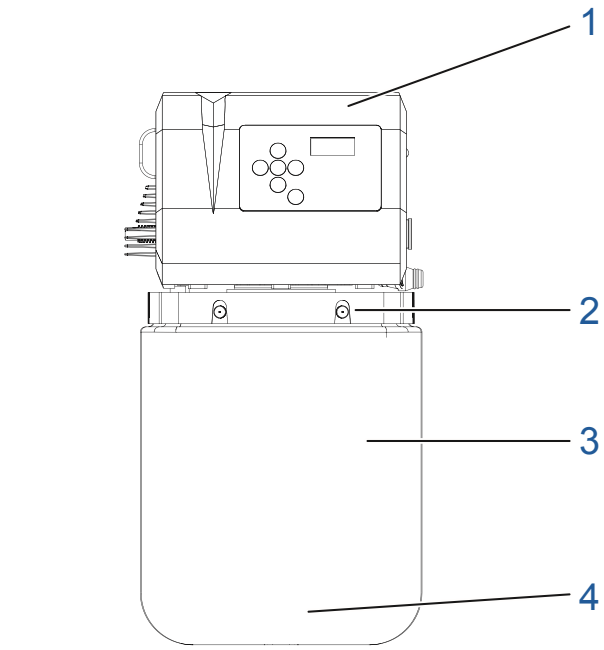
Each species of plant and aquatic animal requires water that contains a special combination of substances. Users of the unit should therefore consult the standard literature and check that they can use retreated drinking water for watering plants or for filling ornamental lakes, aquariums or fish ponds.

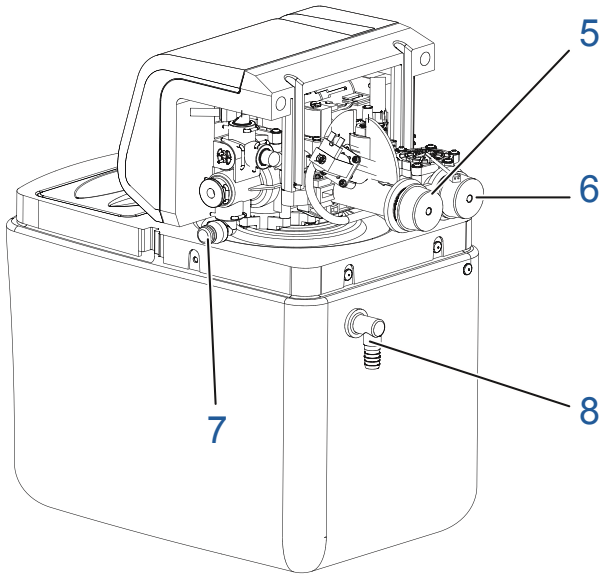
Microbiological and sensory quality of the (partially) softened water

The quality of the treated water depends greatly on the conditions under which the unit is installed and operated. The most important factors are listed in the following table.

	Unfavourable conditions	BWT recommendations
Inflow water quality	Inflow water of marginal quality that may deteriorate further within the unit	Contact your installer. Shorter maintenance intervals
Operating conditions	Long stagnation periods and infrequent regeneration	Observe the notes in the operating instructions.
Salt quality	Cheap regenerative materials with high proportions of insoluble components	Use regenerative in accordance with DIN EN 973 type A.
Installation situation and conditions	High ambient temperatures, e.g. near a heating unit Drainage system for regeneration water incorrectly implemented	Observe the notes in the operating instructions.

When determining whether there is a problem with the sensory or microbiological quality of the treated water, it is important where in the system the quality is measured. For example, if the quality is measured at the tap, the water quality may be affected by the pipe material or by the presence of a water heater or hot water storage tank.





2 List of Supplied Parts

AQA basic water softening system with:

1	Multiple-way control valve with micro-processor controller
	Precision flowmeter for brine
	Softening column with ion exchange resin
2	Cover
3	Storage area for regenerative
4	Brine cavity
5	Hard water inlet
6	Softened water outlet
7	Flushing water connection
8	Overflow
	Cable and mains plug
	Connection set, DN 32/32 DVGW
	2 m flushing water hose
	2 m overflow hose, 18 x 24
	Siphon connection set
	Fasteners
	AQUATEST hardness tester (with Multi-block X in some models)

Optional extras (not included with delivery)

	Order no.
Aquastop ¾"	11825
	Austria: 082021
Aquastop 1"	11826
	Austria: 082022

3 Use

3.1 Intended use

The AQA basic is intended for softening or partially softening drinking and service water.

AQA basic minimises malfunctions and damage due to calcification in water pipelines and the connected fittings, equipment, boilers, etc.

If the unit is intended for a commercial application, a BWT consultant must conduct a test and issue an approval.

3.2 Foreseeable misuse

A product not used for a longer period of time (7 days in accordance with DIN EN 806-5) is not operated as intended.

Non-compliance with the ambient and operating conditions in the technical specifications in chapter 12.

Failure to comply with the maintenance and service intervals specified in this manual.

The use of unauthorised consumables and spare parts.

3.3 Disclaimer

The manufacturer is released from any liability if the customer intentionally or forcibly removes guards or safety devices, if the customer wilfully modifies or circumvents the same, or if the customer does not follow the instructions in this operating manual or on the system.

3.4 Other applicable documentation

Observe all documents from suppliers that were included with delivery. These are considered part of this documentation and must not be changed or removed.

4 Function

4.1 General

The AQA basic is a single-column water softener that functions using ion exchange. It is filled with organic ion exchange material.

Regeneration is triggered volumetrically (depending on the quantity of water). This means that no remaining supply of softened water is discarded during regeneration.

Spring-loaded non-return valves protect all water connections on the inlet side of the unit (in compliance with DVGW). This eliminates the need for a system or pipe separator.

4.2 Operation

The mode of operation is consumption-dependent.

4.3 Regeneration

A precision brine meter measures out the brine required.

The unit is equipped with a device that disinfects the ion exchange material during regeneration.

A special salt dissolution and brine cavity within the regenerative container is used to achieve the shortest salt dissolution times, and therefore extremely short regeneration intervals.

When the regenerative is depleted, a message appears on the screen.

Water may be removed during regeneration, but such water is untreated.

4.4 Operation

The screen and keyboard are used for display and control purposes.

When the unit is started, the available supply of softened water is programmed (depending on the hardness of the drinking water).

The unit is preset. The default setting covers the most common usage scenarios. For special applications, however, adjustments are necessary.

During operation, the screen shows the time of day and the remaining capacity in litres.

4.5 Stagnation management

If the capacity is not used up within 72 hours, the control unit triggers a regeneration.

4.6 Power failure

If a power failure occurs during operation, softened water can still be drawn from the unit, but the water meter will not register the withdrawal. If water is drawn during this time, the water hardness may increase.

In the event of a power failure during regeneration, the system pauses in the process. The flushing water is routed to the sewer outlet until the power is restored.

In the event of a power failure lasting more than 8 hours, an automatic regeneration is triggered when the power returns.

The programmed parameters are permanently stored and remain unaffected by power failures.

5 Installation Conditions

5.1 General

The unit must be installed as described in the installation guide in compliance with the general requirements for the supply of water in Germany ["AVB Wasser"] V, section 12.2 by a water supply company or by a party registered in the water supply company's index of fitters.

Observe all applicable local installation regulations, general guidelines, sanitary requirements and technical specifications.

5.2 Installation site and environment

Water softeners may not be installed in systems that provide water for fire extinguishing purposes.

The installation site must be kept free of frost, must protect the unit from chemicals, paint, solvents and fumes, must be structurally waterproofed in accordance with DIN 18195-5 and must allow for easy connection to the water supply system.

A connection to the sewage system , a floor drain and a separate mains connection (230 V/50 Hz) must be located in the immediate vicinity.

If there is no floor drain, the Aqua Stop safety function integrated in the water softener (available with some models) or the internal Aqua Stop function may suffice.

However, this is at the property insurer's discretion. It is the unit operator's responsibility to clarify this.

If there is no floor drain and the water softener does not have an integrated Aqua Stop function, a separate safety device will have to be installed on site in the direction of flow upstream of the softener.

This safety device (e.g. external BWT AQA stop) has to shut off the water supply when there is no current in order to prevent unintended water leakage from the water softener if the unit is damaged.

The rated mains power (230 V/50 Hz) and the required operating pressure must be present at all times. A separate means of protection against a shortage of water is not provided and must be installed on site if desired.

5.3 Feed water

The hard water to be fed into the unit must always meet the specifications of the Trinkwasserverordnung (German drinking water ordinance) or EU Directive 98/83/EC. The total dissolved iron and manganese may not exceed 0.1 mg/l. The hard water to be fed into the unit must always be free of air bubbles. Install a bleed device if necessary.

If the treated water is intended for human consumption as defined in the Trinkwasserverordnung (German drinking water ordinance), the ambient temperature must not exceed 25 °C.

If the treated water is intended for industrial purposes only, the ambient temperature must not exceed 40 °C.

The unit's maximum operating pressure must never be exceeded (see technical specifications). If the network pressure is higher, a pressure reducer must be installed upstream of the unit.

The unit requires a minimum operating pressure to function correctly (see chapter 12, Technical Data).

During pressure fluctuations and surges, the sum of the pressure surge and the standing pressure must not exceed the nominal pressure. The positive pressure surge must not exceed 2 bar and the negative pressure surge must not be less than 50% of the self-adjusting flow pressure (see DIN 1988-200/ 3.4.3).

Continuous operation of the water softener with water containing chlorine or chlorine dioxide is possible if the concentration of free chlorine/chlorine dioxide does not exceed 0.5 mg/l.

Continuous operation with water containing chlorine/chlorine dioxide will cause premature ageing of the ion exchange material. A water softener reduces the concentration of free chlorine and chlorine dioxide. In other words, the concentration in the outflow of a water softener is generally considerably lower than in the inflow.

5.4 Installation

The pipeline network must be flushed before the unit can be installed.

You must check whether a mineral metering device needs to be installed downstream from the water softener for the purpose of preventing corrosion.

Use corrosion-resistant pipe materials for installation. Pay attention to corrosion-causing chemical properties when different pipe materials are combined (mixed installation), even in the inflow direction upstream of the water softener.

A protective filter must be installed in the direction of flow 1 m upstream of the unit. The filter must be functional before the softener is installed. This is the only way to ensure that dirt and corrosive products do not enter the water softener.

Test sample extraction points must be installed upstream and downstream of the unit, according to the specifications of VDI 6023.

The hose attached to the overflow point of the regenerative container and the flushing water hose must be routed at an incline to the sewage system or connected to a pump.

According to EN 1717, the flushing water hose and the overflow hose must be connected to the sewage system at a specified distance above the highest possible waste water level. (Distance is greater than the diameter of the drain pipe).

If the flushing water is fed into a pump, it must be designed for a water volume of at least 2 m^3/h or 35 l/min for units for building services and at least 3 m^3/h or 50 l/min for Rondomat and AQA perla Professional units.

If the pump is used for other units simultaneously, it must be sized larger by a factor of their water output quantities.

The pump must be salt water resistant.

5.5 Operation

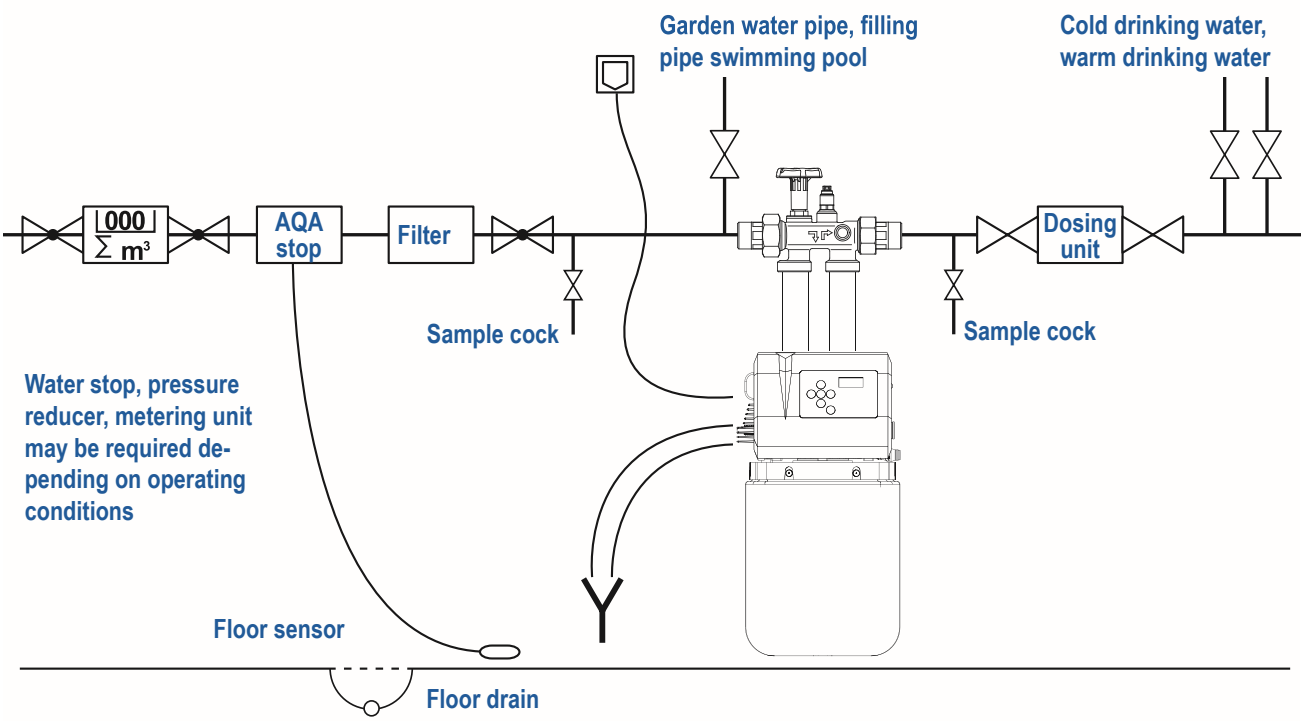
The performance specifications of the unit must match the expected usage conditions. Related information can be found in DIN 1988-200 and in the technical specifications.

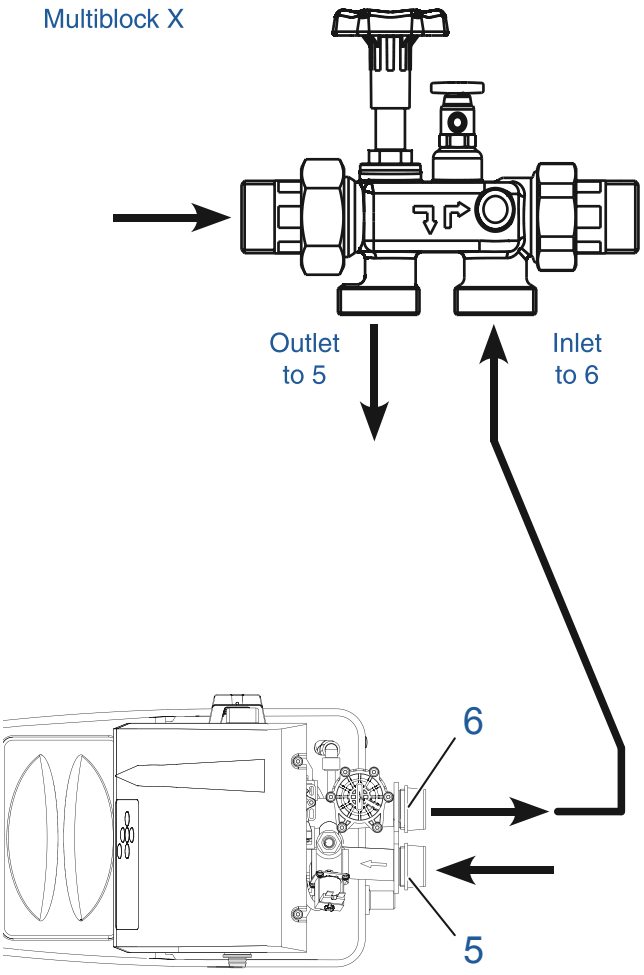
After periods in which little or no water is tapped, e.g. during holidays, you must fully open the tap for at least 5 minutes before you can use the water again (see the section on stoppages in the operating instructions).

The microbiological quality of the softened water is also determined by the quality of the regenerative used.

6 Installation

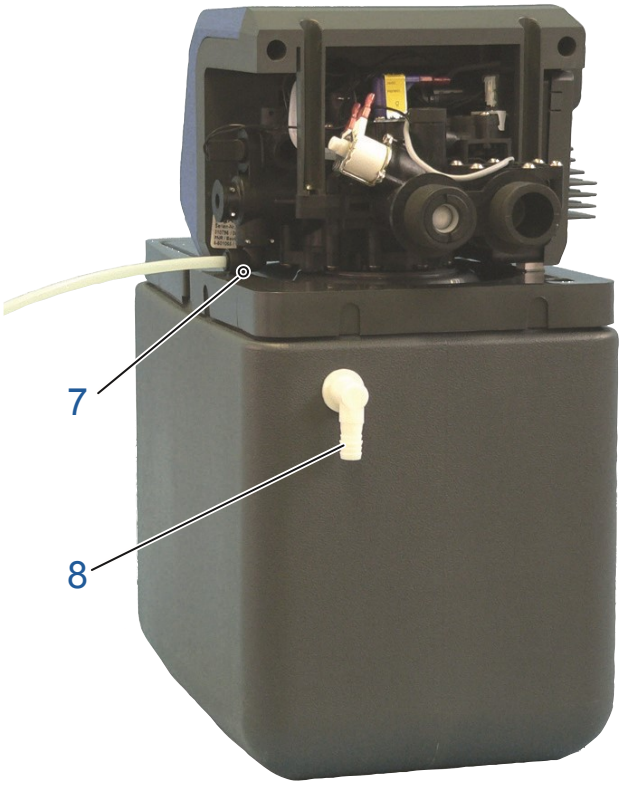
6.1 Installation diagram





- Connect the unit as shown in the installation diagram.
- A bypass is integrated into Multiblock X.
- The unit can be installed in horizontal or vertical pipelines.
- Follow the separate installation and operating instructions for the Multiblock X and connection set DN 32/32, as guarantee claims are otherwise void should the unit be damaged.
- Flush out any dirt particles by opening the handwheel on the Multiblock module.
- Connect according to the arrows indicating the direction of flow.
- Connect a corrugated hose to the Multiblock outlet and then connect this to the hard water inlet (**5**).
- Connect a corrugated hose to the Multiblock inlet and form a watertight seal with the softened water outlet (**6**).

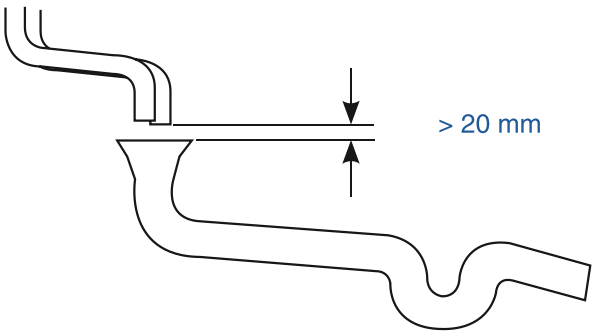
Attach the grey cover to the left side of the control valve.



Firmly insert the flushing water hose into the flushing water connection elbow (**7**).

Route the flushing water hose at an incline to the sewage system connection (drain) and secure the end with the fixing material supplied to prevent it “flapping about” when under pressure.

Attach the overflow hose (18 x 24) to the overflow (**8**). Secure it with cable ties and route it with an incline of at least 10 cm to the sewage system connection (drain).



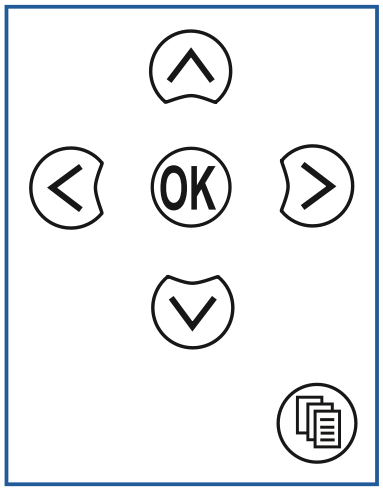
The flushing water and overflow hoses must not be connected or constricted at any point.

Note: According to EN 1717, the flushing water hose and the overflow hose must be connected to the sewage system at a specified distance above the highest possible waste water level. (Distance is greater than the diameter of the drain pipe).

7 Start-up

7.1 Operating the controller

Keypad



Function of keys

OK	Confirms entries
^ v	Moves the cursor, modifies input values
< >	Moves the cursor
	Switch between Operation and Programming modes

Operating display

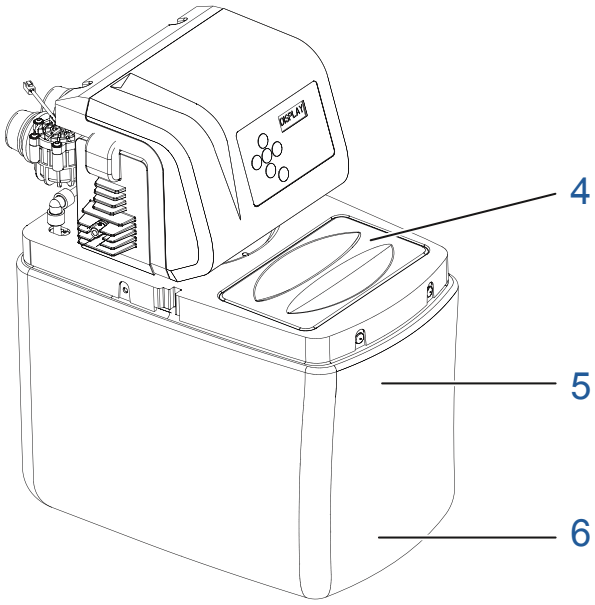
2 14 : 49 4448 L	Display alternates between showing the **day of the week and the time of day** and **the remaining capacity in litres**. In Programming mode, the following items flash: 1 = Monday 2 = Tuesday 3 = Wednesday ...

7.2 Factory settings

Capacity specifications (in litres) correspond to a blended water hardness of 4 °d

Capacity:	6.3 m^3 x°d (1.1 mol)
Drinking water hardness / capacity:	22 °d / 350 litres

7.3 Preparing the brine



Check that the unit has been properly installed.

Measure and note the hardness of the drinking water upstream of the softener using AQUATEST.

- Remove cover (**4**).
- Pour regenerative (salt tablets according to DIN EN 973 type A, e.g. Clarosal or Sanisal/ Sanitabs) into the storage area (5).
- Fill the brine cavity (**6**) with 5 litres of drinking water.

Note: Observe the following if consumption of a large quantity of softened water is expected after start-up: The unit requires approx. 3 hours for the brine to form.

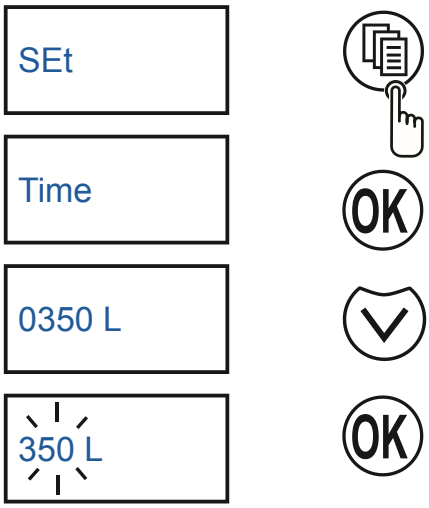
e.g.

- Insert mains plug. The water supply must remain closed. The display shows **StArt** and then alternates between the capacity and day of the week (1-7) / time.
- Allow basic fixing to finish (approx. 40 sec.). The running noise stops.
- You can cancel regenerations that have begun automatically by pressing the OK button.
- Open the water supply line.
- Initiating a start-up flush
- Hold down the Change mode button until **Ibn** appears on the display. Flushing occurs for 1 minute (flush time t1). The valve then moves into the operating position.
- The unit is ready for use.

The capacity and the blending valve are preset. Adjustment must be made only when the water is particularly hard (hardness exceeding 22 °d) or when the water is of medium hardness (hardness less than 14 °d).

8 Operation

8.1 Setting the supply of softened water



Press the Change mode button

The display shows SEt

Press the OK key

Press the cursor down key

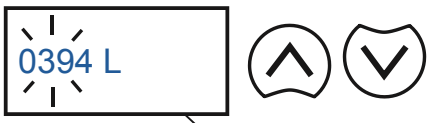
Display flashes

Setting the supply of softened water

(applies only to blended water hardness of 4°)

Consult the table for the litre value that corresponds to your inlet water hardness.

e.g.

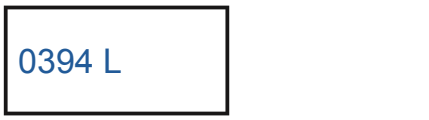


Example:

Inflow water hardness 20 °d

Operating range tP1

Inlet water hardness °d	Supply of softened water litres
10	1050
11	900
12	788
13	700
14	630
15	573
16	525
17	485
18	450
19	420
20	394
21	371
22	350
23	332
24	315
25	300
26	286
27	274
28	263
29	252
30	242
31	233
32	225
33	217
34	210
35	203



Exit programming mode.

The new supply of softened water is not displayed until after the next regeneration.

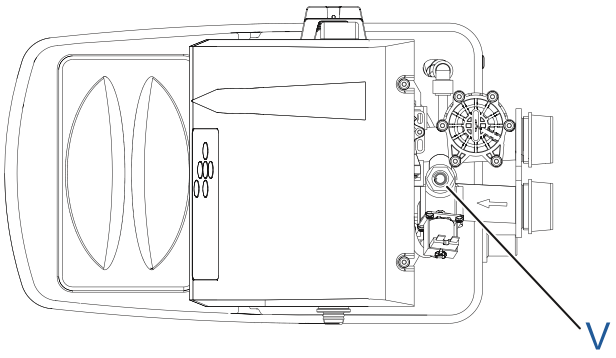
Calculate the setting at a different blended water hardness as follows:

$$\text{Softened water supply} = \frac{K}{E - V} \text{ in litres}$$

K = 6,300 l x °d

E = inflow water hardness in °d

V = desired blended water hardness in °d



8.2 Setting the hardness of blended water

The unit is preset to 4 °d.

To test the water hardness, allow the nearest downstream tap to run for a while (approx. 400-500 l/h) and check the hardness of the blended water using the AQUATEST hardness tester. Adjust with the blending valve V until the desired value (BWT recommendation 4 - 8 °d) is reached.

The Trinkwasserverordnung (German drinking water ordinance) stipulates a sodium limit of 200 mg/l. The limit has been set this low so that people on a low sodium diet can still consume drinking water and use it for cooking.

Sodium content of partially softened water

Reducing the hardness of drinking water by 1 °d increases the sodium content by 8.2 mg/l.

Hardness of drinking water – hardness of blended water x 8.2 mg/l = increase in the sodium content.

8.3 Handing over the unit to the operator

If there is a delay between the installation/start-up of the unit and transfer to the operator, a manual regeneration must be performed.

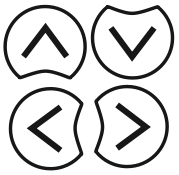
The operator must be told how the unit works as well as how to operate and inspect it. Ensure that the operator receives the installation and operating manual.

8.4 Setting the time and day of week

Press the Change mode button

The display shows **SEt**

Blinking digits can be changed.



Changes the digit

Moves the cursor

e.g.

Current day of the week and time

Exit programming. mode

8.5 Starting regeneration manually

Hold down the OK button for approx. 4 sec. until regeneration begins

The screen alternately shows the remaining regeneration time in minutes (with flashing symbol) and **rEG On**

e.g.

8.6 Add regenerative

SALt

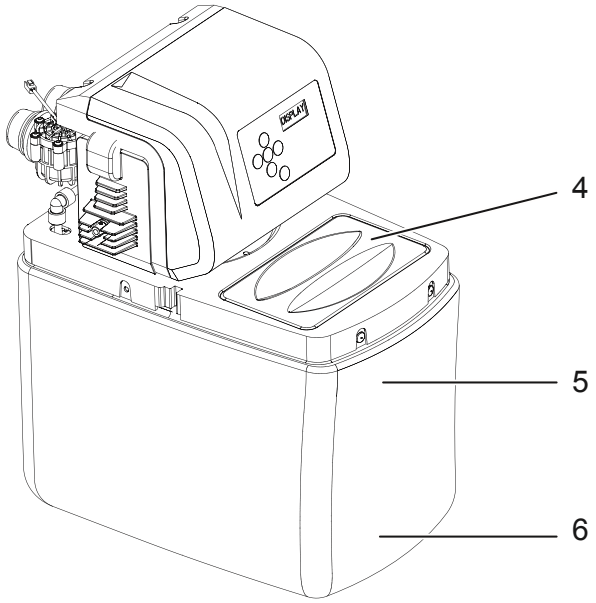
You must add regenerative no later than when the sieve base becomes visible. If the message **SALt** appears on the display, then the regenerative is completely depleted.

Only commonly available regeneration salts in accordance with DIN EN 973 Type A (salt tablets e.g. Clarosal or Sanisal/Sanitabs) may be used.

Operation cannot be guaranteed with the use of any other salt.

OK

- Open the cover (**4**). Pour regenerative into the storage area (**5**).
- Press the OK key. The **SALt** indicator disappears.



Refill the unit in such a way that no dirt can get into the storage area (**5**) (if necessary, clean the packages containing the regenerative before use). Clean the storage area or brine cavity (**6**) with drinking water if dirt gets into it.

8.7 Service message

433 L

A flashing litre display indicates that it is time for servicing. The service reminder appears after 150 regenerations.

Contact after-sales service.

PO5

Motor position error

Contact after-sales service.

TBD

Error with the current monitoring of the solenoid valves

Contact after-sales service.

Para

Memory error

Contact after-sales service.

8.9 Shutting down the unit

Close the Multiblock. The drinking water system is supplied with untreated water through the bypass in the Multiblock.

Initiating a start-up flush

- Press Change mode key
  A flushing procedure is performed, which flushes out the water to relieve pressure.
- Wait approx. 5 minutes until the operating display appears.
- Pull the mains plug.

8.10 Product returns

At BWT, product returns will not be processed without a return number (RMA no.). In Germany, phone telephone number 06203 73 73 to receive a return number.

8.8 Stoppages and restarting the unit

In case of expected stagnation phases, take the following preventive measures:	BWT recommendations for restarting a unit after stagnation phases:
Fewer than 3 days None	Open all taps to flush the system.
3 to 30 days Close the main shut-off valve. Disconnect the water softener from the water supply system (close the Multiblock).	Open the main shut-off valve and the Multiblock. Regenerate both exchanger columns. Then open all taps to flush the system.
3 to 30 days Close the main shut-off valve. Disconnect the water softener from the water supply system (close the Multiblock).	Open the main shut-off valve and the Multiblock. Have BWT customer service perform a regeneration of both exchanger columns using Dioxal disinfectant. Then open all taps to flush the system.
1 to 6 months Close the main shut-off valve. Disconnect the water softener from the water supply system (close the Multiblock) and shut the unit down.	Open the main shut-off valve and the Multiblock. Have BWT customer service perform a regeneration of both exchanger columns using Dioxal disinfectant. Then open all taps to flush the system.
Longer than 6 months Disconnect the building's water system from the municipal water system. Disconnect the water softener from the water supply system (close the Multiblock) and shut the unit down.	Reconnect the unit to the municipal drinking water system. Have BWT customer service perform a regeneration of both exchanger columns using Dioxal disinfectant.

9 Operator responsibilities

You have purchased a product that is durable and easy to service. However, certain duties must be carried out. Flawless function requires:

- Operation as intended
- Regular checks and servicing

Check the quality and pressure conditions of the inflow water regularly with your water supplier. If the water quality changes, the settings may need to be changed. Consult a specialist in this case.

To ensure the proper functioning and safety of the product, regular inspections must be carried out by the operator (every 2 months), and routine maintenance (EN 806-5) must be performed by the BWT after-sales service staff or a fitter authorised by BWT to carry out maintenance (every 6 months).

Wearing parts must also be replaced after the prescribed intervals in order to guarantee functionality and fulfil the warranty conditions.

9.1 Intended operation

The intended operation of the product includes start-up, operation, decommissioning and, if necessary, recommissioning. Intended operation of the product and drinking water installation requires regular checks, servicing and operation (water flows through the product) in accordance with the operating conditions for design and construction, including simulated sampling (manual or automated rinsing), as appropriate. If simulated sampling is not possible, the product must be taken out of service.

9.2 Checks

(**Carried out by the operator)**

BWT recommends that the operator regularly carry out the following checks and record the results:

- **Water quality.** Depending on the product, inflow water valuesand set outlet water values may need to be corrected.
- **Water pressure.** If the pressure conditions change, the product settings may also have to be changed.
- Operating condition of the product.
- Check whether messages have been issued.
- Watertightness.

9.3 Inspection

(Carried out by the operator in accordance with EN 806-5)

Inspection activities	Interval	Note for products **WITHOUT** active BWT DES registration	Note for products **WITH** active BWT DES registration
Check/refill regenerative	According to use	Required	Required
Check brine containers for soiling	Every 2 months	Required	Required
Check for leaks, visual inspection	Every 2 months	Required	Required
Functional test/control unit display	Every 2 months	Required	Not required
Test regenerative consumption depending on the treated water	Every 2 months	Required	Not required
Check the setting of the regeneration waste water system	Every 2 months	Required	Required
Check the counting function of the water meter	Every 2 months	Required	Not required
Test the regeneration process	Every 2 months	Required	Not required
Clean the brine container and the internal surfaces that come into contact with water	Every 6 months	Required	Required

9.4 Maintenance in accordance with EN 806-5

(Carried out by BWT after-sales service or an authorised technician in accordance with EN 806-5)

In addition to all inspection activities, maintenance work on the assemblies listed below is required every 6 months by BWT after-sales service or a specialist trained by BWT. A detailed maintenance manual can be requested from the qualified fitter at BWT. We recommend that you enter into a maintenance agreement with the BWT after-sales service department or your fitter.

Assembly (the assemblies exist or do not exist depending on the type and design of a BWT product)	
Cleaning and possible sanitisation	
1.1	Entire hydraulic unit
1.2	End shield
1.3	Gears
1.4	Drive motor
1.5	Spool
1.6	Red/green injector
1.7	Electrolysis cell
1.8	Locking pin
1.9	Waste water elbow
	JG hoses
2.1	Blending
2.2	Water meter cover
2.3	Impeller
2.4	Guide baffle
2.5	Non-return valve
2.6	Bypass valve
2.7	Filler plug
3.1	Brine meter
3.2	Brine meter solenoid valve
5.1	Sieve base
5.2	Low salt gauge
5.3	Brine level switch
6.1	AQA Stop floor sensor
6.2	AQA test

9.5 Replacement of parts

The operator must ensure that parts that are subject to wear and aging during the life of the product are replaced by a qualified fitter.

Details of the replacement cycles can be found in the maintenance manual from BWT.

10 Warranty

If the product malfunctions during the warranty period, contact your contract partner, the installation company, and quote the unit type and production number (see technical specifications or the type plate on the unit).

Non-compliance with the installation conditions and the operator responsibilities leads to the loss of warranty and exclusion of liability.

The wearing parts defined in the “Operator responsibilities” section and the consequences of failing to replace these parts on time are not covered by the two-year legal warranty.

BWT assumes no liability in the event that the unit fails or if the capacity becomes deficient due to incorrect material selection/combination, floating corrosion products or iron and manganese deposits, or any resulting damage thereof.

The use of regenerative that does not comply with DIN EN 973 type A voids the warranty.

11 Troubleshooting

Fault	Cause	Remedy
SALt is indicated on the display.	Insufficient regenerative in the regenerative container (**3**).	Refill regenerative and press the OK button until the SALt display goes out.
	Insufficient pipeline pressure resulting in insufficient suction speed.	Press the OK button to acknowledge the fault. If the fault occurs again, contact after-sales service.
Unit not supplying softened or blended water.	No regenerative in the regenerative container (**5**).	Refill regenerative and press the OK button until the SALt display goes out. Wait 3 hours for the brine to form and start manual regeneration.
	Power supply interrupted.	Establish electrical connection.
	Blending adjusting spindle (V) not set correctly.	Perform settings as described in the “Setting the water hardness” section within Start-up.
Unit not supplying softened water or the flow is insufficient.	Inlet pressure is too low.	Increase inlet pressure (set pressure reducer if necessary) and start manual regeneration.
Coloured flushing water at start-up.	Abrasion particles from exchanger resin.	Repeat start-up flush.

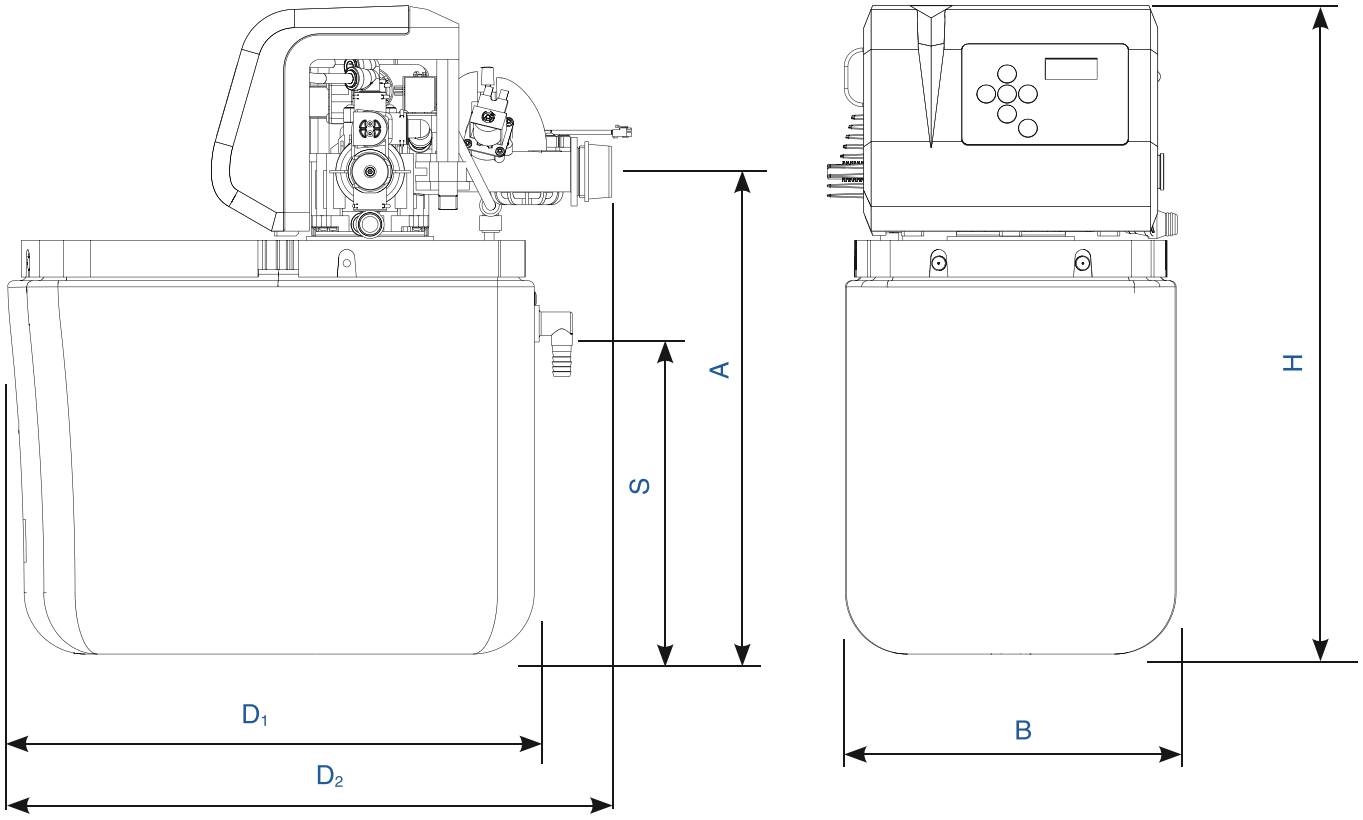
If the fault cannot be remedied by following these steps, please contact our after-sales service department and quote the series and production number (see type plate on rear of unit).

12 Technical Data

Water softening unit	Type	AQA basic
Nominal connection width	DN	32
Connection type		G 1¼“
Nominal capacity according to DIN 14743	mol (m³ x°dH)	1,1 (6)
Capacity / kg regenerative salt in accordance with DIN EN 14743	mol	4,3
Operating flow when blending from 20°dH to 0°dH	m³/h	1
Nominal flow rate according EN 14743	m³/h	1,6
Nominal pressure (PN)	bar	10
Operating pressure, min./max.	bar	2-8
Pressure drop at nominal flow	bar	0,5
Area of application	Residential units persons	1-2 1-5
Ion exchange material fill quantity	l	3,2
Supply of regenerative, max.	kg	25
Consumption of regenerative per 100%-regeneration, approx.	kg	0,25
Flushing water consumption per regeneration at 4 bar, approx.	l	21
Flushing water flow during regeneration, max.	l/h	170
Duration of 100%-regeneration per ion exchange material tank , approx.	min	21
Water temperature, min. – max.	°C	5 - 25
Ambient temperature, min. – max.	°C	5 - 40
Humidity		Non-condensing
Power supply	V/Hz	230 / 50-60
Unit voltage	VDV	24
Power during operation , max.	W	4
Power during regeneration, max.	W	38
Protection class		IP53
Operating weight, at maximum filling	kg	50
Operating weight, approx.	kg	22
Production number without Multiblock X	**PNR**	**6-501175**
Production number with Multiblock X	**PNR**	**6-501174**

12.1 Dimensions

Height	H	mm	530
Width	B	mm	290
Depth	D_1/ D_2	mm	430/495
Water inlet connection height	A	mm	395
Water outlet connection height	A	mm	395
Overflow connection height	S	mm	270
Min. sewage system connection		DN	40



13 Decommissioning and disposal

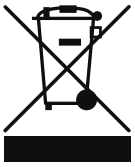
13.1 Decommissioning

The product may only be shut down and dismantled by qualified specialists.

Observe all applicable safety regulations when dismantling the system.

13.2 Disposal

NOTICE



- **The product must not be disposed of with household waste.**
- **At the end of the product's life cycle, ensure that it is properly disposed of or recycled.**
- **Observe the legal disposal guidelines for the country in which the product is used.**
- **The following materials are used in the product: metal, plastic, electronic components.**

Disposal of transport packaging

Returning the packaging into the material cycle saves raw materials and reduces the amount of waste. Your dealer will take the packaging back.

Disposal of the old device

Do not dispose of your old appliance with household waste. Use the official collection and return points for the return and recycling of electrical and electronic equipment at local authorities or dealers. You are legally responsible for deleting any personal data on the old device to be disposed of.

Disposal of used batteries

Batteries must never be disposed of with household waste. Used batteries that are not firmly enclosed by the device must be removed and disposed of at a suitable collection point (e.g. retail outlet), where they can be handed over free of charge.

14 Standards and Legal Regulations

Standards and legal provisions shall always be applied in the most recent version.

The following standards and legal regulations must be observed depending on the intended use:

General administrative framework regulation on minimum requirements for the discharge of waste water into bodies of water (“Rahmen-AbwasserVwV”) appendix 31 – water treatment, cooling systems, steam generation

German act for promoting closed substance cycle waste management and ensuring environmentally compatible waste disposal (“Kreislaufwirtschafts- und Abfallgesetz”)

Law on the management of water resources (“Wasserhaushaltsgesetz”)

German ordinance on the quality of water for human consumption (“Trinkwasserverordnung”)

EN 806, Specifications for drinking water installations

DIN 1988 standards, specifications for drinking water installations

DIN EN 1717, protection of drinking water from contaminants in the drinking water supply system

The system meets the following standards:

DIN EN 14743 Water conditioning equipment inside buildings – Softeners

DIN 19636-100 Softeners (cation exchangers) for drinking water installation – Part 100: requirements for application of softeners in accordance with DIN EN 14743.

15 Operating Report

Trinkwasserverordnung, §16 (German drinking water ordinance) requires you to keep an operating report in the following form

Unit designation: ______________________________

Installation site of the unit: ______________________________

Date	Water meter reading upstream of the unit [m³]	Water hardness upstream I downstream of the unit [°dH]	Increase in sodium content of drinking water. Water hardness, upstream I downstream x 8.2 mg [mg]	Regenerative refilled [kg]
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	
		I	x 8.2 =	

Keeping an operating report is not always required, for example in a private single-family house.

EN

Information according to § 16 and § 21 of the German Drinking Water Ordinance

The drinking water in this building is treated as followed:

Type of treatment:

☐ Partial softening/(partial de-calcification)

☐ Metering

Designation of the unit: _____

Installation site of the unit: _____

☐ **Metering of silicate substances**

For minimising the corrosiveness of drinking water and preventing elevated concentrations of heavy metals

Silicate concentration of your water, approx. _____ **mg/l**

Max. permitted addition according to the German drinking water ordinance: 15 mg/l (calculated as SiO_2)

☐ **Metering of phosphate substances**

For minimising the calcification and corrosiveness of drinking water and preventing elevated concentrations of heavy metals

Phosphate concentration of your water, approx. _____ **mg/l**

Max. permitted addition according to the German drinking water ordinance: 2.2 mg/l (calculated as P)

☐ **Metering to set the pH value**

For minimising the corrosiveness of drinking water and preventing elevated concentrations of heavy metals

pH value of your water _____

Limits according to the German drinking water ordinance: greater than 6.5 and less than 9.5

☐ **Metering of sodium hypochlorite or chlorine dioxide solution**

To increase sanitary properties of drinking water

☐ **Chlorine or** ☐ **chlorine dioxide concentration of your water, approx.** _____ **mg/l**

Max. permitted addition according to German drinking water ordinance: 0.3 mg/l chlorine or 0.2 mg/l chlorine dioxide

☐ **Partial softening of drinking water by sodium ion replacement**

To minimize liming

Hardness range of your water:

☐ **Soft (less than 8.4 °dH)**

☐ **Moderate (8.4 °dH – 14.0 °dH)**

Sodium concentration of your water, approx.: _____ **mg/l**

Max. permitted concentration according to German drinking water ordinance: 200 mg/l

Company: _____

Date of last maintenance: _____

EU-Konformitäts-Erklärung
EU Declaration of Conformity
UE Certificat de conformité

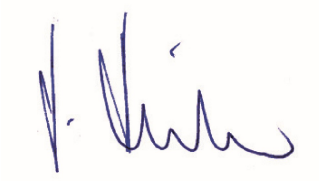
im Sinne der EG-Richtlinien	Niederspannung 2014/35/EU EMV 2014/30/EU
according to EC instructions	Low voltage 2014/35/EU EMC 2014/30/EU
en accord avec les instructions de la Communauté Européenne	Basse tension 2014/35/UE CEM 2014/30/UE
Produkt/Product/Produit:	Water softening unit Softening unit Systèmes d'adoucissement d'eau
Typ/Type/Type:	**AQA basic**

ist entwickelt, konstruiert und gefertigt in Übereinstimmung mit den oben genannten Richtlinien, in alleiniger Verantwortung von:

has been developed, designed and produced according to the above mentioned Directive at the sole responsibility of:

est développé, conçu et fabriqué en accord avec les instructions mentionnées ci-dessus sous l'entière responsabilité de:

BWT Wassertechnik GmbH, Industriestr. 7, 69198 Schriesheim
(WEEE-Reg.-Nr. DE 80428986)



Schriesheim, November 2014

Ort, Datum / Place, date / Lieu et date

Lutz Hübner

Signature (Managing Director)
Signature (Management)
Signature (Direction)

For more information contact us:

BWT Austria GmbH
Walter-Simmer-Straße 4
A-5310 Mondsee
Phone: +43 / 6232 / 5011 0
Fax: +43 / 6232 / 4058
E-Mail: office@bwt.at

BWT Wassertechnik GmbH
Industriestraße 7
D-69198 Schriesheim
Phone: +49 / 6203 / 73 0
Fax: +49 / 6203 / 73 102
E-Mail: bwt@bwt.de

www.bwt-group.com

BWT
BEST WATER TECHNOLOGY