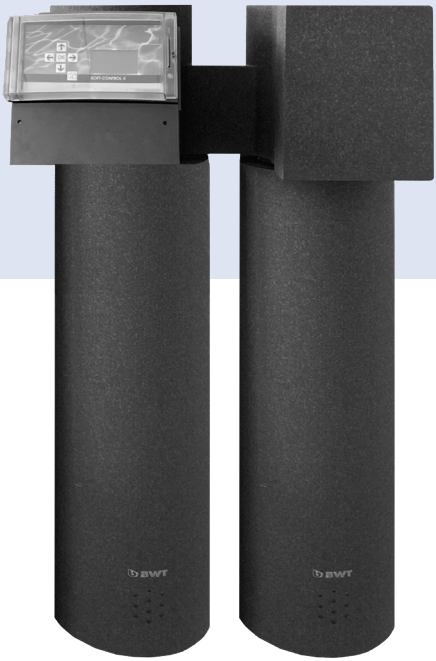
Installation and operating manual EN



Rondomat Duo 2, 3
Insulation retrofitting set

Subject to change!

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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 device.

This manual applies only to the product(s) specified on the title page.

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This manual was created, reviewed and approved in German. If there are any discrepancies between the German edition of the manual and editions in other languages, the information in the German document should be given preference.

In the event of inconsistencies, contact our customer service; see chapter “7.2 Your contact at BWT”, page 22.

Table of contents

1 Safety instructions

1.1 General safety instructions

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

Nevertheless, there is still a risk of damage to persons or property if you do not follow this chapter and the safety instructions in this documentation.

- Read this documentation carefully and in its entirety before working with the product.
- 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 on the product, contact the BWT after-sales service.
- Use only accessories, spare parts and consumable materials that have been approved by BWT.
- Use your personal protective equipment. It ensures your safety and protects you from injury.
- Perform only tasks that are described in these maintenance instructions or that you have been trained to do by BWT.
- Perform all tasks in compliance with all applicable standards and provisions.
- Instruct the operator in the function of the product.
- Instruct the operator in the maintenance of the product.

1.2 Validity of this documentation

This documentation is intended for 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 maintaining the product safely and properly. Read this documentation in full before working with the product. Pay particular attention to the “Safety Instructions” chapter.

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.

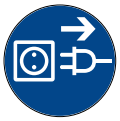
A **qualified specialist** is someone with specialist training, knowledge and experience as well as knowledge of the applicable regulations allowing them to assess the work assigned to them, identify potential risks, and take suitable safety measures. Specialists must comply with applicable, industry-specific regulations.

A **trained person** is someone who has been instructed by a qualified specialist in the tasks entrusted to them and the potential dangers of improper conduct and, if necessary, trained and instructed on the necessary protective equipment and protective 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.

1.5 Symbols used

	This symbol indicates risks due to the mains voltage. Risk of death by electric shock!
	This symbol indicates information that must be followed.
	Unplug device before any service and repair work.

	This symbol indicates that this product must not be disposed of in household waste at the end of its service life.
	This symbol indicates that the product can be recycled after it is shut down.

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 the 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

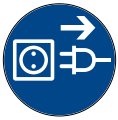
Signal word	Colour	Severity of the hazard
DANGER		**High-risk hazard.** Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING		**Hazard with a moderate degree of risk.** Indicates a hazardous situation which, if not avoided, could result in death or serious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

⚠ DANGER!

Mains voltage!

Risk of death by electric shock!



- ► **Unplug device before any service and repair work.**
- ► **If the mains cable of the unit becomes damaged, you must replace it with an original BWT cable.**

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

2 Scope of delivery

Insulation retrofitting set — Rondomat Duo 2:

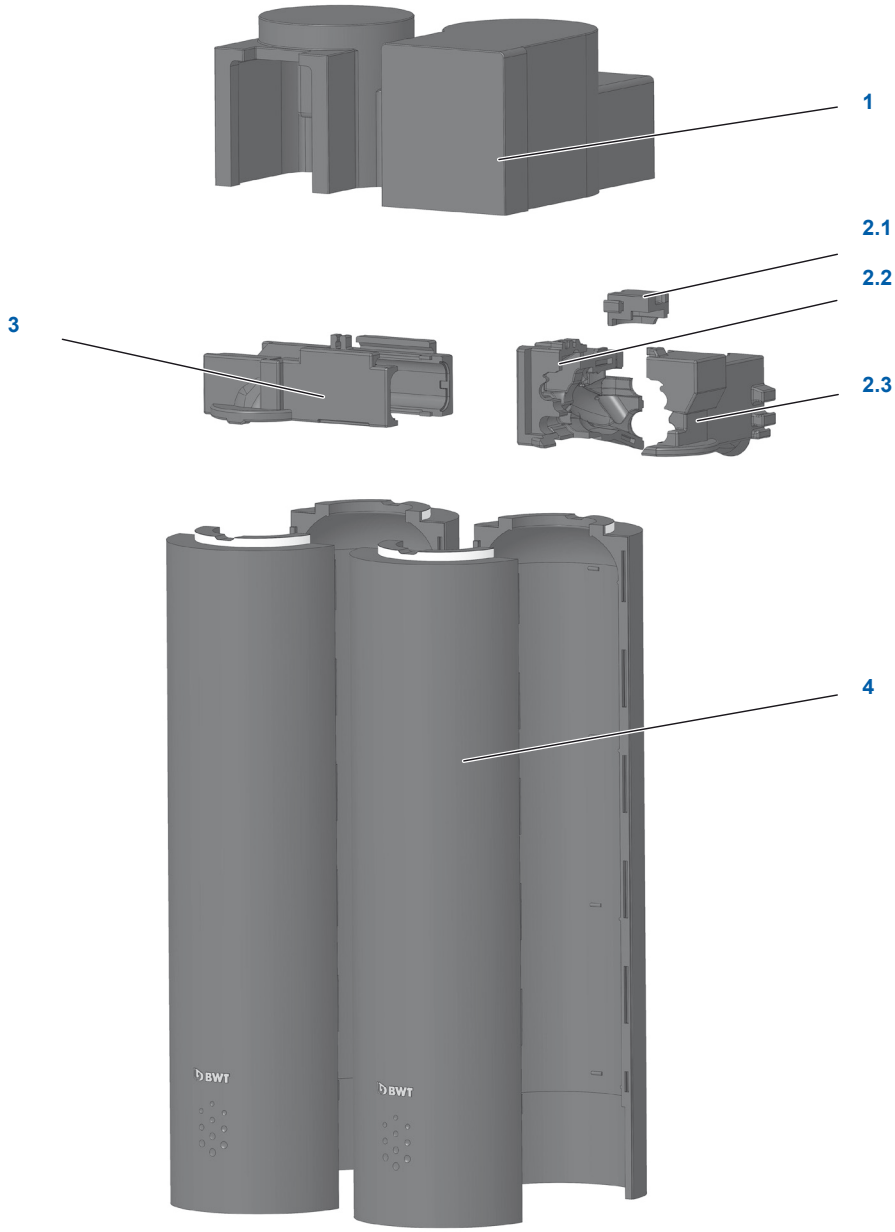
Position	Designation	Quantity
1	Cover for Rondomat Duo, size 1	1
2	Insulation set for control valve, Rondomat Duo, size 1	1
2.1	Additional cover (insulation set for control valve)	1
2.2	Inner half-shell (insulation set for control valve)	1
2.3	Outer half-shell (insulation set for control valve)	1
3	Insulation set for reinforced hose, size 1	1
4	Insulation set for IXT 1024 softening columns	1
	Insulation retrofitting set, size 1	1

Insulation retrofitting set — Rondomat Duo 3 IXT:

Position	Designation	Quantity
1	Cover for Rondomat Duo, size 1	1
2	Insulation set for control valve, Rondomat Duo, size 1	1
2.1	Additional cover (insulation set for control valve)	1
2.2	Inner half-shell (insulation set for control valve)	1
2.3	Outer half-shell (insulation set for control valve)	1
3	Insulation set for reinforced hose, size 1	1
4	Insulation set for IXT 1044 softening columns	1
	Insulation retrofitting set, size 1	1

Insulation retrofitting set — Rondomat Duo 3 BWC:

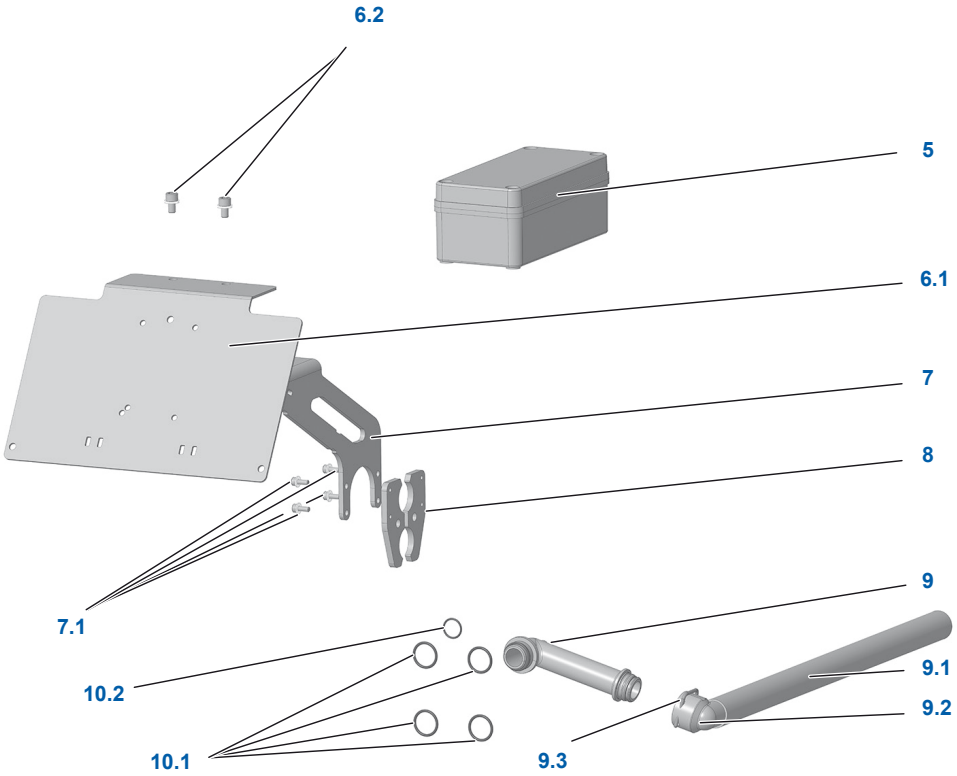
Position	Designation	Quantity
1	Cover for Rondomat Duo, size 1	1
2	Insulation set for control valve, Rondomat Duo, size 1	1
2.1	Additional cover (insulation set for control valve)	1
2.2	Inner half-shell (insulation set for control valve)	1
2.3	Outer half-shell (insulation set for control valve)	1
3	Insulation set for reinforced hose, size 1	1
4	Insulation set for BWC 1044 softening columns	1
	Insulation retrofitting set, size 1	1



Schematic diagram

Insulation retrofitting set, size 1

Position	Designation	Quantity
5	Solenoid valve housing, 170 x 80 x 65	1
6.1	Mounting bracket for Rondomat Duo insulation retrofitting set	1
6.2	Cylinder head screw, M 6 x 10	2
*	Washer, A 6.4	2
7	Holder for mounting bracket 4.0, size 1	1
7.1	Cylinder head screw, M 4 x 10	4
*	Washer, A 4, 3	4
8	Bracket, 72 x 31	2
9	Waste water quick-release connection M	1
9.1	Piece of hose, 18 x 24 (400 mm)	1
9.2	Quick-release waste water connection, 90-degree angle	1
9.3	Clip, 23 x 3	1
10.1	O-ring, 18 x 2.2	4
10.2	O-ring, 14 x 1.6	1
*	O-ring, 20 x 2	1
*	O-ring, 19 x 1.5	1
*	Connection cable, solenoid valve, retrofitting, Rondomat Duo, size 1	1
*	Extension cable, water meter, retrofitting, Rondomat Duo, size 1	1
*	Wago terminal connector, 221 – 412	2
*	Cable tie, 204 x 3.6	5
	Installation and operating manual for Rondomat Duo 2, 3 insulation retrofitting set	1



Schematic diagram

3 Intended use

3.1 Proper use

The product is used for retroactive insulation of Rondomat Duo-type water softeners.

3.2 Foreseeable misuse

Any use of the product outside of the intended scope of application.

4 Function

In the event of stagnation, the product delays the adjustment of the water temperature in the unit to the ambient temperature. Depending on the type of unit, the temperature takes around 5 to 10 hours longer to adjust with insulation than without the insulation. On average, this is a doubling of the adjustment period for the water temperature.

The insulation moves the range from which condensation is formed on particularly metallic unit components.

Range for the formation of condensation (example)

	Ambient temperature	Relative humidity
Unit without insulation	15°C	60%
Unit with insulation	32°C	60%

When exposed to indirect sunlight (in a shaded area), it is weather resistant (UV-resistant).

The product is made from EPP (expanded polypropylene). The material is HBCD-free and fulfils the following requirements:

- Fire protection requirements in accordance with EN 13501-1, E.
- Codes of practice for drinking water installations in accordance with DIN 1988-200:2012-05, section 14.2.6 (on insulation and sheathing of cold drinking water pipes).

5 Installation

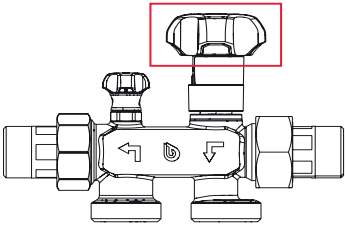
5.1 Required tools

The following tools are required to fit the insulation:

- Slotted screwdriver (6.5 mm; 4.0 mm)
- Phillips screwdriver (PH1, PH2)
- Electrician's screwdriver
- TORX T20 screwdriver
- Allen key (sizes 3, 5 and 6)
- Ring spanner (size 8)
- Diagonal pliers
- Needle-nose pliers

Label all the assembly screws, washers and nuts to be disassembled for the retrofit accordingly and store them for reuse.

5.2 Close the connection fitting

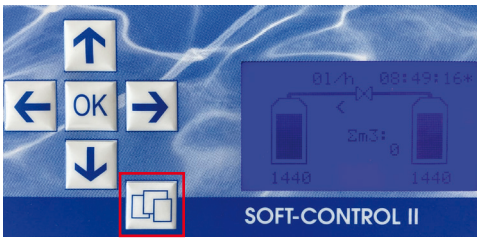


► Turn the hand-wheel on the connection fitting clockwise down to the lower stop (arrow marking on the hand-wheel: "Z" is for closed).

✓ The water supply line for the product is closed and the connecting fitting is in "Bypass" operating mode.

► Provide a container for collecting residual water.

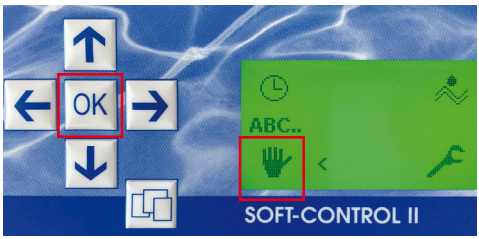
5.3 Change the softening columns



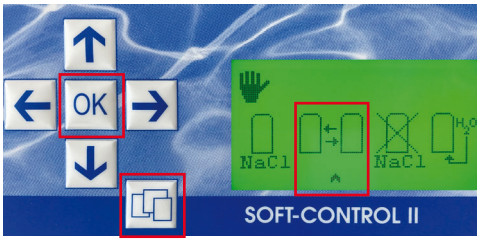
✓ **The unit is depressurised.**

► Proceed as follows to change the softening columns:

1. Press the menu button.



2. Use the arrows to select the hand in the menu display.
3. Press the OK button to confirm your selection.



4. Use the arrows to select the option for switching the softening columns.
5. Press the OK button to confirm your selection.
6. Press the menu button to exit the menu.

Changing the softening columns takes about one minute.

5.4 Disconnect the system from the mains voltage

✓ **You have replaced the softening columns.**

⚠ DANGER!

High voltage!

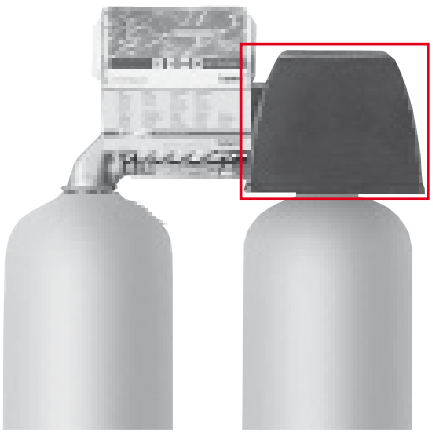
Risk of death by electric shock!

- ► Disconnect the power supply to the system before all maintenance and repair work.
- ► There may still be voltage from external connections even when the mains voltage is disconnected.
- ► Discharge live components through earthing.

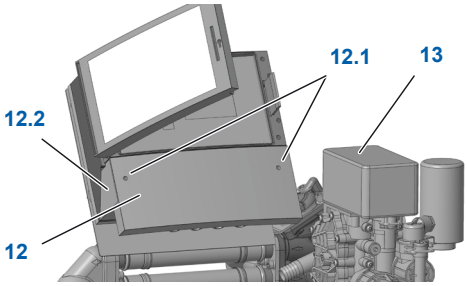
► Disconnect the mains plug.

5.5 Remove the plastic cover from the control valve

► Remove the plastic cover from the control valve.



Schematic diagram



Schematic diagram

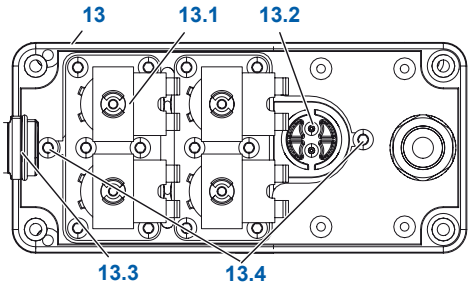
5.6 Conversion work on the hydraulics

✓ **The unit is disconnected from the power supply.**

✓ **The unit is depressurised.**

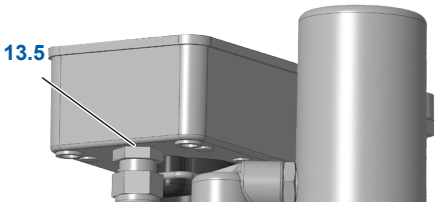
5.6.1 Conversion work on the solenoid valve housing

1. Unscrew the two screws (12.1) from the access flap (12) for the control unit.
2. Open the access flap (12) for the control unit.
3. Release all the cable glands and cable sets on the control unit and carefully remove them from the control unit.
4. Unscrew the screws on the intermediate frame (12.2) for the control unit and remove the intermediate frame.
5. Open the old solenoid valve housing (13).
6. Remove the cable lugs from the solenoid valves (13.1) and the electrolysis cell (13.2).
7. Unscrew the lock nut (13.3) for the cable gland on the old solenoid valve housing (13).
8. Pull the old solenoid valve cable set out of the solenoid valve housing.
9. Remove two screws (13.4) from the old solenoid valve housing.



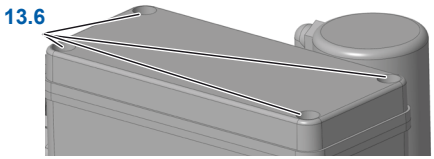
Schematic diagram

10. Replace the old solenoid valve housing with the new solenoid valve housing and secure it with the two screws removed previously.
11. Insert the new solenoid valve cable set into the new solenoid valve housing through the round opening (13.5).
12. Tighten the lock nut (13.5) for the cable gland on the new solenoid valve housing.

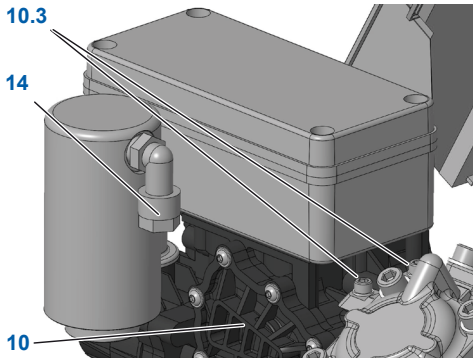


Schematic diagram

13. Connect the new solenoid valve cable set according to the terminal diagram (see chapter “10 Appendix”, page 24).
14. Close the new solenoid valve housing with the cover and four screws (13.6).



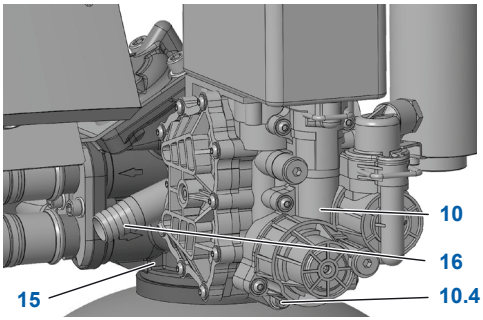
Schematic diagram



Schematic diagram

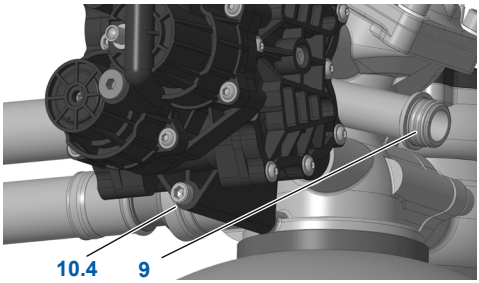
5.6.2 Conversion work on the waste water connection

1. Disconnect the brine hose from the angled fitting (14) on the degassing tank.
2. Disconnect the old waste water flushing hose from the hose nozzle (16).
3. Unscrew the two screws (10.3) on the regeneration block (10).



Schematic diagram

4. Unscrew the screw (10.4) on the regeneration block (10).
5. Remove the regeneration block (10) from the control valve (15).
6. Replace the hose nozzle (16) with the waste water connection (9) and align the waster water connection outward. Use the included 20x2 O-ring.
7. Replace the four 18x2.2 O-rings and one 14x1.6 O-ring on the regeneration block (10) and connect the regeneration block to the control valve (15).
8. Fasten the screws on the regeneration block (10.3) and (10.4).

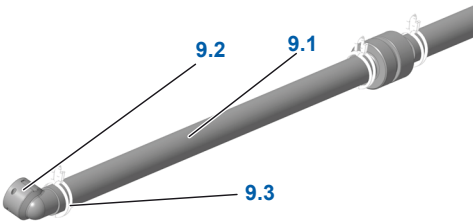


Schematic diagram

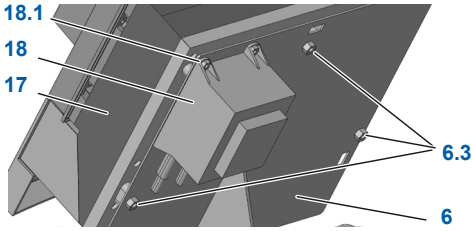
Do not connect the replaced waste water flushing hose to the waste water connection (9) until the insulation is installed.

► Replace the waste water flushing hose.

1. Replace the old 60 mm hose section with the included hose section (9.1).
2. Connect the new hose section (9.1) to the quick-release connection (9.2).
3. Secure all the connection points for the waste water flushing hose using hose clamps (9.3).



Schematic diagram



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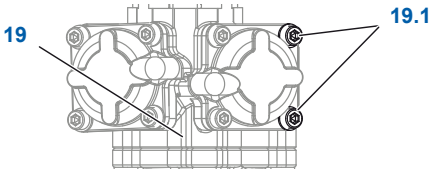
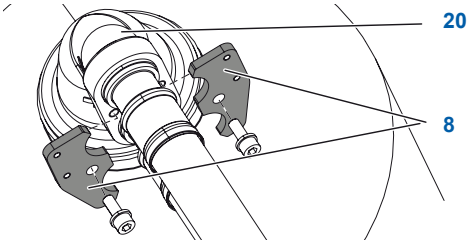
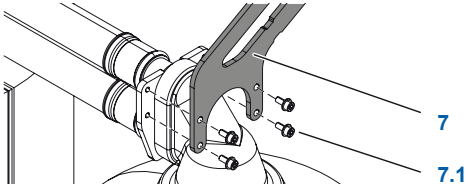


Schematic diagram



Schematic diagram



Schematic diagram

5.7 Conversion work on the mounting bracket for the control unit

✓ **The unit is disconnected from the power supply.**

✓ **The unit is depressurised.**

1. Unscrew the three hex nuts (6.3) on the back of the old mounting bracket (6).
2. Remove the entire control unit (17) from the old mounting bracket (6).
3. Unscrew the four screws (18.1) from the front of the old mounting bracket (6) and remove the mains transformer (18).
4. Unscrew the two screws (19.1) for fastening the old mounting bracket on the membrane cover of the control valve (19).
5. Remove the old mounting bracket.
6. Reattach the membrane cover of the control valve using the two screws (19.1).
7. Unscrew the screws for the two old brackets on the connection adapter (20).
8. Replace the old brackets with the new brackets (8) and fasten the new brackets using the same screws.

For now, only slightly tighten the screws on the new brackets. It must still be possible to move the brackets.

9. Screw the holder (7) for the mounting bracket in place with the new brackets (8) using the four included screws (7.1) and washers. Note the installation direction.
10. Tighten the screws on the new brackets (8).

5.8 Checking the unit for leaks

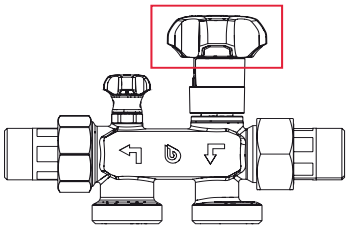
✓ **The unit is disconnected from the power supply.**

⚠ WARNING!

Risk of injury!

Severe injuries due to slipping on damp surfaces.

► **Immediately remove any escaping water. Do not connect damaged or incomplete units to the power and water supply system.**



Schematic diagram

► Open the connection fitting and apply water pressure to the unit.

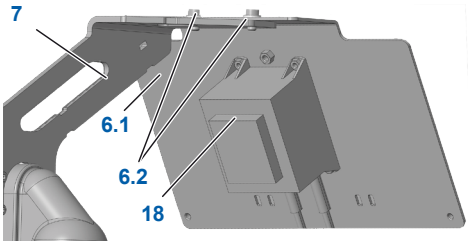
► Check the unit for leaks.

► Close the connection fitting again.

5.9 Installing the mounting bracket and control unit

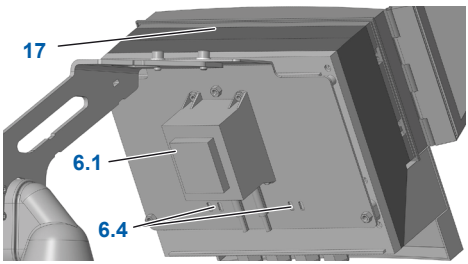
✓ **The unit is disconnected from the power supply.**

✓ **The unit is depressurised.**



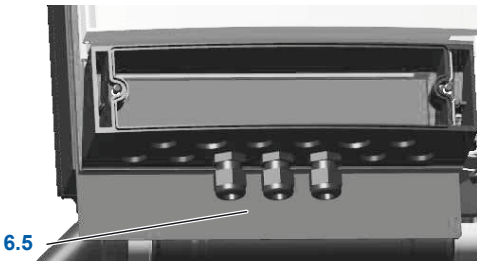
Schematic diagram

1. Screw the new mounting bracket (6.1) onto the new holder (7) using the two included screws (6.2) and two washers. Note the installation direction.
2. Screw the mains transformer (18) onto the new mounting bracket using the screws and nuts removed previously.

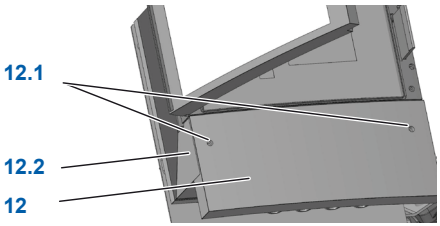


Schematic diagram

3. Pull one cable tie through each lug (6.4) in the new mounting bracket (6.1). The cable ties fix the electrical cables onto the back of the mounting bracket in a later step.
4. Screw the control unit (17) onto the new mounting bracket using the screws and nuts removed previously. Leave the control unit open for the next step.



Schematic diagram



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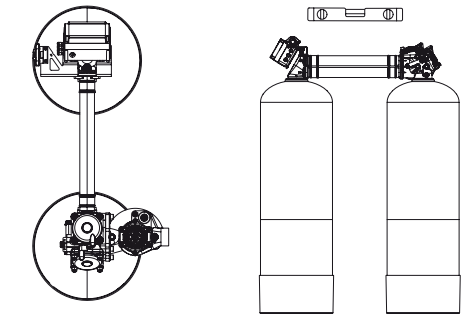


Schematic diagram

5.10 Cable set extension

✓ **The unit is disconnected from the power supply.**

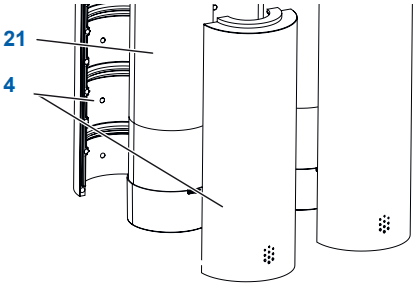
✓ **The unit is depressurised.**

1. Insert the new solenoid valve cable set through the cable gland (6.5) on the control unit.
2. Connect the new solenoid valve cable set according to the terminal diagram (see chapter “10 Appendix”, page 24).
3. Guide the water meter cable set extension through the cable gland (6.5) on the control unit and connect it according to the terminal diagram (see chapter “10 Appendix”, page 24).
4. Connect the water meter cable set to the water meter cable set extension using the terminal clip.
5. Connect the remaining cables in accordance with the terminal diagram (see chapter “10 Appendix”, page 24).
6. Mount the intermediate frame (12.2) on the control unit and tighten the screws for the intermediate frame.
7. Mount the access flap (12) for the control unit and tighten the two screws on the access flap (12.1).

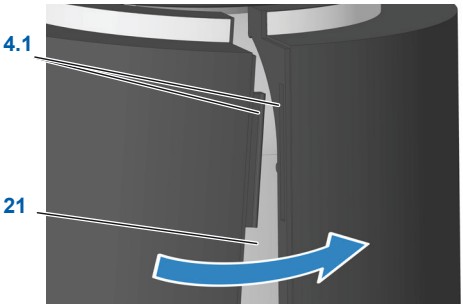
5.11 Aligning the unit

Ensure that the unit is aligned horizontally and that the surface is level.

► Align the unit and avoid bending the reinforced hoses under all circumstances.



Schematic diagram



Schematic diagram

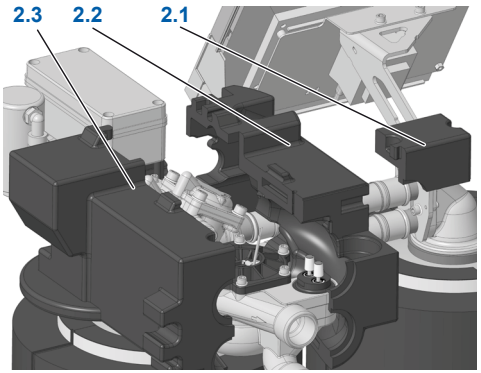
5.12 Fitting the insulation

✓ **Conversion work on the hydraulics is complete.**

5.12.1 Mounting the insulation on the softening columns

► Fit the insulation on the two softening columns. The insulation for a softening column consists of two symmetrical half-shells.

1. Place the open half-shells (4) around the softening column (21) vertically and align them so that they are parallel to each other.
2. Connect the top snap-closure points (4.1) on both sides with each other. To do so, you can rotate the half-shells around the softening columns (21).
3. Turn the first snap-closure edge towards you and connect the half-shells to each other from top to bottom by pressing the half-shells together with a tapping movement near the snap-closure edge.
4. Turn the second snap-closure edge towards you and connect the half-shells to each other from top to bottom by pressing the half-shells together with a tapping movement near the snap-closure edge.
5. Align the insulation on the softening column with the BWT logo to the front.



Schematic diagram

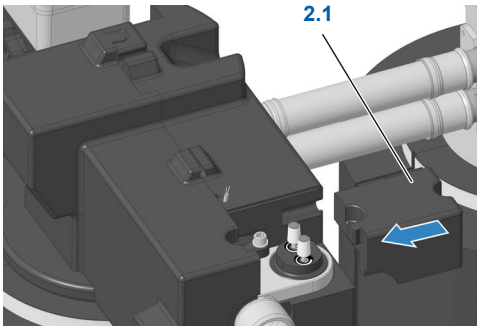
5.12.2 Fitting the insulation on the control valve

The regeneration block remains uninsulated.

The insulation for the control valve consists of one inner and one outer half-shell and an additional cover for the blending valve.

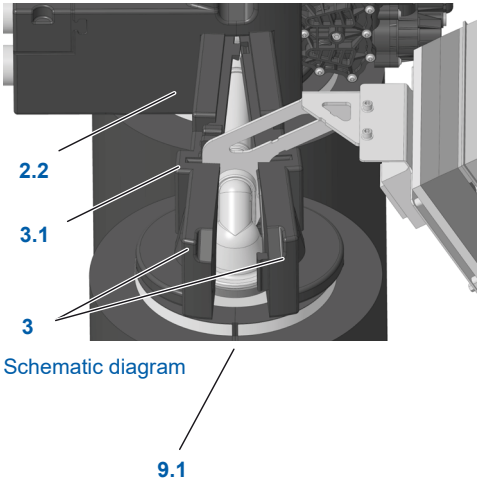
► Fit the insulation on the control valve.

1. Push the outer half-shell (2.3) onto the control valve from the outside.
2. Push the inner half-shell (2.2) onto the control valve from the inside.



Schematic diagram

3. Push the additional cover (2.1) into the inner half-shell.



Schematic diagram

5.12.3 Fitting the insulation on the reinforced hoses

The insulation for the reinforced hose consists of two half-shells.

► Fit the insulation on the reinforced hose.

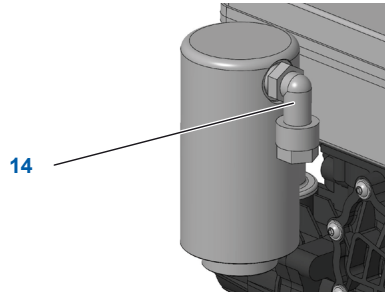
1. Insert the two half-shells (3) into the cut-out on the control valve insulation (2.2) in a V-shape.
2. Close the two half-shells for the reinforced hose in a V-shape and connect the snap closure. Pay attention to the cut-out for the mounting bracket (3.1).

5.13 Preparing for operation

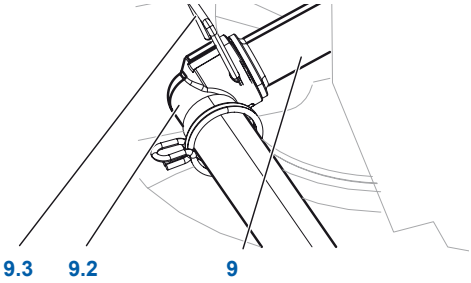
- ✓ **The unit is disconnected from the power supply.**
- ✓ **The unit is depressurised.**
- ✓ **The insulation is fully installed.**

5.13.1 Routing hydraulic lines

1. Disconnect the brine hose from the angled fitting (14) on the degassing tank.

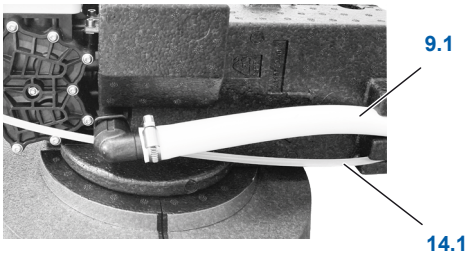


Schematic diagram



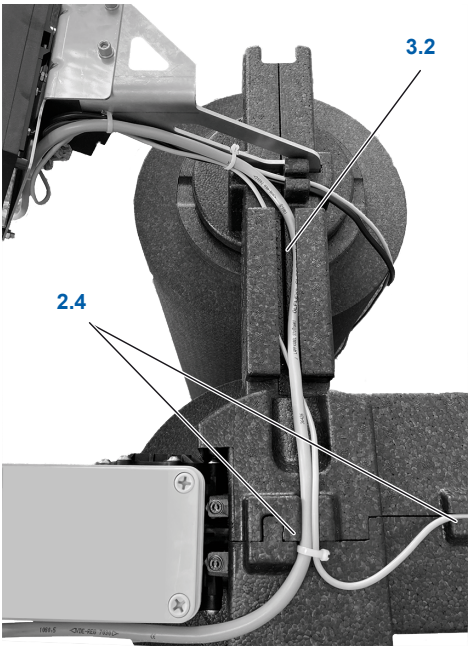
Schematic diagram

2. Mount the 19x1.5 O-ring on the waste water connection (9).
3. Connect the quick-release connection (9.2) including the pre-assembled waste water flushing hose (9.1) to the waste water coupling (9) and secure it using the included clip (9.3).



Schematic diagram

4. Press the brine hose (14.1) into the designated snap-closure point in the control valve insulation.
5. Press the waste water flushing hose (9.1) into the designated snap-closure point in the control valve insulation.
6. Route the waste water flushing hose to the sewage system (see the installation and operating instructions for your water softener).

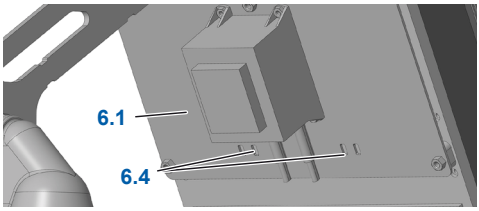


Schematic diagram

5.13.2 Routing electrical cables

- ✓ **The unit is disconnected from the power supply.**
- ✓ **The unit is depressurised.**
- ✓ **The insulation is fully installed.**
- ✓ **Conversion work on the hydraulics is complete.**

1. Route the electrical cables as described in the terminal diagram (see chapter “10 Appendix”, page 24).
2. Press the electrical cables into the designated snap-closure points (2.4) in the control valve insulation.
3. Route the electrical cables to the control unit through the integrated cable duct (3.2) on the reinforced hose insulation.



Schematic diagram

4. Secure the electrical cables to the mounting bracket (6.1) for the control unit using the cable ties installed previously (6.4).

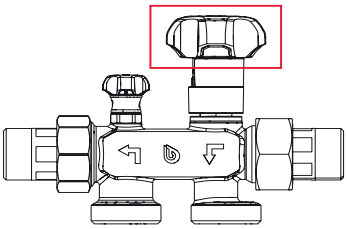
5.14 Establishing the power supply and water supply

⚠ WARNING!

Risk of injury!

Severe injuries due to escaping water or parts ejected from the system.

- ► **Before opening the connection fitting, check that the system is installed completely and correctly.**
- ► **Do not connect damaged or incomplete units to the power and water supply system.**



Schematic diagram

► Reconnect the unit to the power supply.

► Open the connection fitting and apply water pressure to the unit.

5.15 Checking for leaks

1. Trigger the regeneration process via the control unit.
2. Check the waste water connection and the waste water flushing hose for leaks.

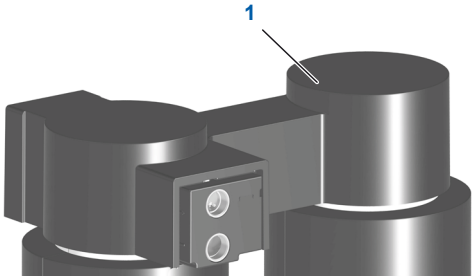
5.16 Final operations

✓ **The insulation is fully installed.**

✓ **Hydraulic lines are routed.**

✓ **Electrical cables are routed.**

► Place the cover (1) onto the unit.



Schematic diagram

6 Spare parts

You can find the part numbers for spare insulation parts in the latest version of the spare parts catalogue.

7 Warranty

Failure to comply with the safety instructions described in chapter 1, incorrect use of the insulation or failure to observe technical data will result in the loss of warranty and exclusion of liability.

7.1 Product returns

Product returns will not be processed without a return number (RMA no.).

In Germany, call our after-sales service in Schriesheim to receive a return number.

Unauthorised returns of goods will not be accepted by BWT. Please always contact your contract partner first.

7.2 Your contact at BWT

You can reach our customer service on the following phone number:

Service acceptance	**+49 6203 7373**
Monday to Thursday:	6:30 a.m. to 6:00 p.m.
Friday:	6:30 a.m. to 4:00 p.m.

8 Disposal

NOTE

- **The insulation must not be disposed of through household waste.**
- **Ensure that it is properly disposed of or recycled at the end of its life cycle.**
- **Observe the legal disposal guidelines for the country in which the product is used.**
- **The materials used in the insulation are: metal, plastic.**

8.1 Disposal of the transport packaging

Recycling the packaging materials saves resources and reduces waste. Return the packaging to your specialised dealer.

8.2 Disposal of the insulation

Do not dispose of the insulation in household waste. Use the official municipal collection and returns facilities to return and recycle materials.

9 Technical data

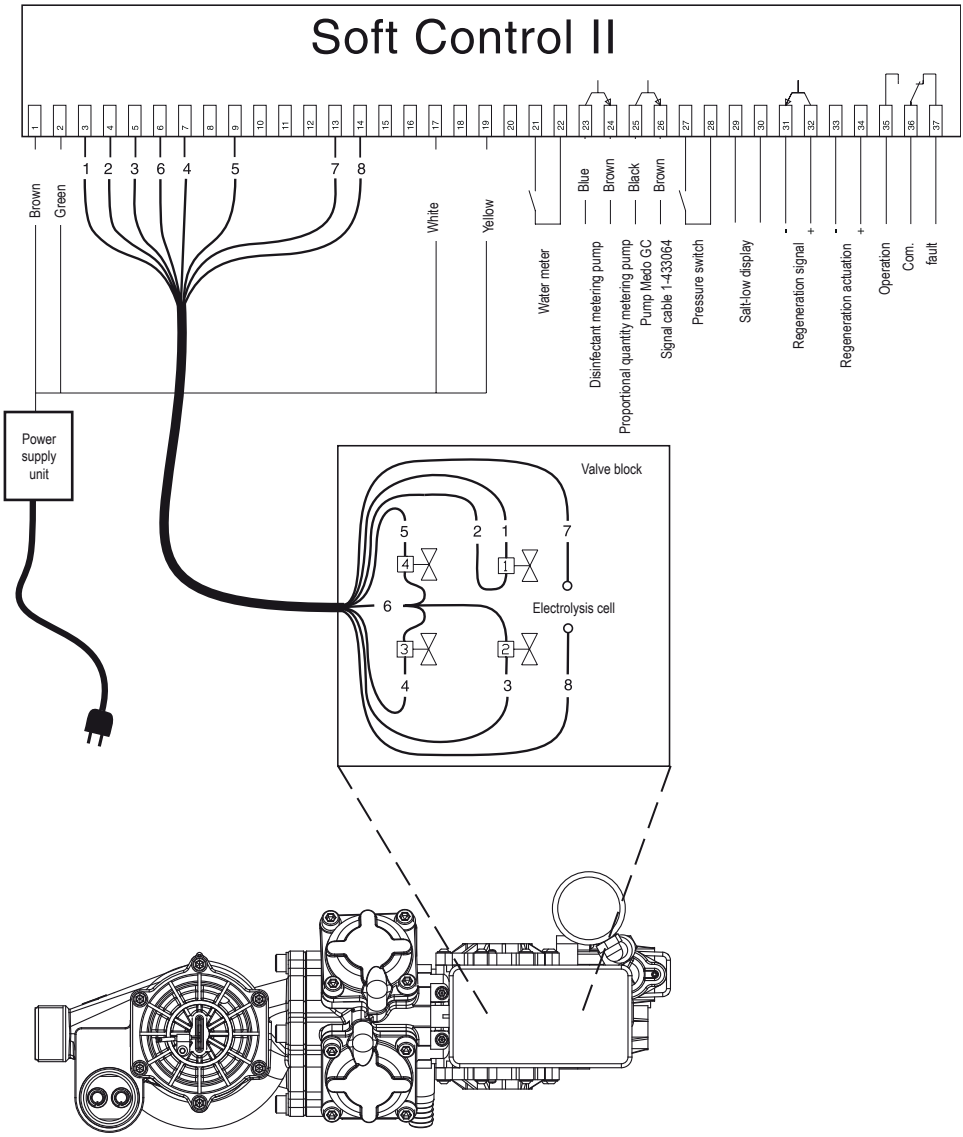
Rondomat Duo insulation	Unit	Value
Insulation layer thickness on functional surfaces	mm	> 9
Thermal conductivity (λ)	W/mK	0.04
Ambient temperature (min./max.)	°C	5-30 / 5-40

10 Appendix

10.1 Terminal diagram

Rondomat Duo 2, 3

1. Remove the mains plug.
2. Connect the wires to the control unit terminals



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