

BWT THERO 90PRO



- DE EINBAU- UND BEDIENUNGSANLEITUNG
- EN INSTALLATION AND OPERATING INSTRUCTIONS
- FR INSTRUCTIONS DE MONTAGE ET DE SERVICE
- IT ISTRUZIONI PER IL MONTAGGIO E PER L'USO
- DA MONTAGE- EN BEDIENINGSHANDLEIDING
- NL MONTERINGS- OG BETJENINGSVEJLEDNING
- ES INSTRUCCIONES DE MONTAJE Y MANEJO
- PT MANUAL DE MONTAGEM E DE INSTRUÇÕES
- PL INSTRUKCJA MONTAŻU I OBSŁUGI
- HU BESZERELÉSI ÉS HASZNÁLATI UTASÍTÁS
- RU РУКОВОДСТВО ПО МОНТАЖУ И ЭКСПЛУАТАЦИИ
- ZH 安装及操作说明手册

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1 Introduction and safety

1.1 Abbreviations and subject index

Softening:

The water purification process removes the hardness from raw water. Hardness constituents are the portion of calcium and magnesium ions in the water.

Raw water:

Raw water (usually untreated drinking water) must be pre-treated (usually softening) before it can be used in the RO device.

RO:

Abbreviation for reverse osmosis.

Permeate:

This is "pure water" that has been largely desalinated by reverse osmosis. The characteristic value is the electric conductivity in $\mu\text{S}/\text{cm}$.

Concentrate:

This is waste water containing the salts and minerals that have been removed from the raw water.

Diaphragms:

The "filter" of the device which is capable of desalinating the raw water by high pressure and flow.

TDS:

Abbreviation for "Total Dissolved Solids" the total amount of dissolved salts, measured in mg/l .

SDI:

Abbreviation for "Silt Density Index". The "Silt Density Index" is a measure of the blockage tendency of water. The characteristic value is the electrical conductivity.

The smaller the value of the electrical conductivity measured (in $\mu\text{S}/\text{cm}$) by the RO device, the lower the salt concentration in the permeate product.

IOM:

Abbreviation for "Installation and Operating Manual"

Permeate yield (WCF):

The ratio between the quantity of pure water produced (permeate) and the waste water produced.

Bypass setting with cold drinking water:

Using the bypass setting on the blue setting mixer head (at the top of the device below the service cover), an amount of cold drinking water can be added to the pure water produced. By turning the blending head while holding the blue switch, you can set the required locking position 0, 1, 2 or 3. The higher the number of the locking position, the higher the mixing ratio of the feed water (Chapter 3.2). The BWT THERO 90PRO enables continuous adjustment of the bypass independent of locking position 0, 1, 2, 3).



Fig. 1: BWT THERO 90PRO – front side of the device

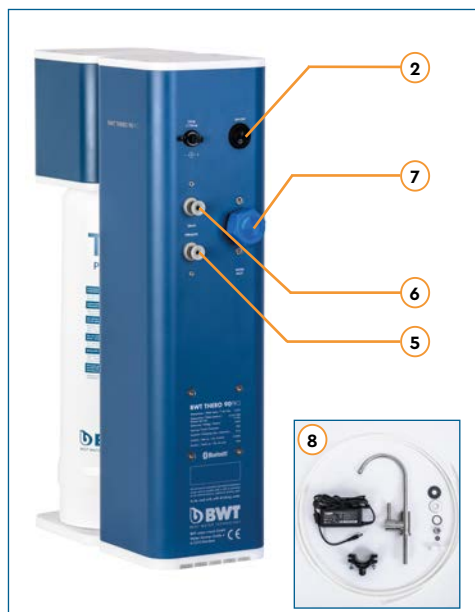


Fig. 2: BWT THERO 90PRO – back side of the device

1.2 Scope of delivery

The reverse osmosis device is supplied with the following (Fig. 1 and Fig. 2):

- 1 RO cartridge
- 2 Device ON/OFF switch
- 3 Top service cover for blending valve (initial setting "0")
- 4 Bottom service cover for attaching/detaching the RO cartridge
- 5 Feed water connection 3/4"
- 6 Permeate connection 1/4"
- 7 Concentrate connection 1/4"
- 8 BWT tap with connection material

Optionally available:

RO replacement cartridge (item no. 812829)

1.3 Manufacturer's address

BWT water + more GmbH

Walter-Simmer-Straße 4

5310 Mondsee, Austria

Telephone: +43/6232/5011-0

Fax: +43/6232/4058

E-mail: warewashing@bwt-group.com

1.4 General information

This installation and operating manual (IOM) contains important instructions for safe and efficient use of the reverse osmosis device BWT THERO 90PRO. This installation and operating manual (IOM) is part of the device and must be constantly available at the place of operation for all staff members assigned.

1.4.1 Reading the installation and operating manual (IOM)

The staff must have read and understood this IOM prior to any work being carried out. A basic precondition for safe working is the adherence to all stated safety and operating instructions.

In addition, the local accident prevention provisions and the general safety provisions effective at the place of operation are applicable. The illustrations in these instructions are intended to provide a basic understanding and may deviate from the actual design of the device. Justified claims cannot be derived from the same.

1.4.2 Warranty and disclaimer



Observe: The information and instructions contained in this Installation and Operating Manual were compiled based on current standards and regulations, the state of the technology, and our many years of experience and observation.

The warranty is void in any of the following cases:

- Failure to follow the provisions and information in this IOM
- Improper use
- Improper or faulty installation
- Improper start-up, operation or maintenance
- Use of non-approved components or non-original parts
- Neglecting to perform the required service and replacement tasks
- Technical modifications: damage, faults and stoppages resulting from unauthorised alterations

1.4.3 Responsibilities of the operator

- The installation and operating manual (IOM) must be easily accessible and kept in the immediate vicinity of the device.
- The device must be operated in a technically faultless and operationally safe condition only.
- The provisions in the IOM are to be followed absolutely.

1.4.4 Licensing conditions

This IOM is protected by copyright law. Surrendering the manual to any third party, duplication of any kind and form – also in excerpts – as well as the utilisation and/or communication of the content are not permitted without the written consent of the manufacturer. Infringements obligate to pay compensation for damages. Further claims are reserved.

1.4.5 Description of symbols listed

This installation and operating manual uses the following symbols. The warnings/instructions are introduced by signal words to underline risks. The warnings/instructions absolutely must be complied with. The operator must act carefully to avoid accidents and property damage.



Danger: Electric current or voltage! Always consult a qualified electrician when working on places denoted by this symbol.



Attention: Dangerous spot! Details or orders and prohibitions to avoid personal injury or extensive damage to property.



Observe: Underlines useful recommendations and information for an efficient operation free of any interruptions.



Note: Additional information for the operator.

1.5 Operating and safety notes

This section gives an overview of all operational and safety aspects important for ensuring safe and fault-free operation. Despite all possible precautionary measures, some residual risk remains with any product, especially if it is used improperly. Warranty claims are void unless the provisions in this IOM are observed and followed.

1.5.1 Proper use

This device is for desalination of drinking-quality water at up to 30 °C and 0.2 MPa (2 bar). It can be used either with or without an atmospheric pressure tank (application dependent). Consult your dealer about installation recommendations.



Observe: The inflow water must not exceed the limit values given in the technical data nor the calcium solubility limit!

The device shall only be used for its intended purpose as designed and as described here in this manual. Any other use is considered "improper".



Warning! The device must be fed only with cold water in drinking water quality.

1.5.2 Permissible operation method



Observe: To protect the drinking water, observe the country-specific guidelines for drinking water installations in any work on the RO device.

- The device must be disconnected prior to performing any maintenance work on the drinking water supply. Rinse the water pipe sufficiently before reconnecting the device.
- Before installation, disconnect the device and any terminal devices from the power (pull the mains plug).



Observe: Improper installation of the RO device may cause damage to it.

- Observe any country-specific installation regulations (such as DIN 1988, EN 1717), general hygienic conditions and technical data for protecting the drinking water.
- Unauthorised modifications to the RO device and technical alterations are not permitted.
- Avoid mechanical damage to the device. Otherwise the warranty is void.
- Install a stop valve upstream of the RO device.
- Connect the device only using flexible hoses that conform to DVGW W 543.
- The device may not be installed in the vicinity of heat sources or open flames.
- The RO device may not come into contact with chemicals, solvents, or vapours.
- The installation site must be free of frost and protected from direct sunlight.
- The device may not be operated with feedwater that is microbially contaminated, whose origin or quality is unknown, or similar.
- When the RO device is used for food applications, all permeate consumers must be cleaned and rinsed thoroughly before use.
- Avoid leaving the device in storage for a long time in order to reduce the risk of idle contamination.

1.5.3 Impermissible operating methods



Attention: Danger through improper use!

Claims for damages resulting from improper use are void.



Danger: Always disconnect the voltage supply of the unit by removing the plug or fuse if hard wired during any maintenance and electrical work.

1.5.4 Procedure following an extended stoppage of operation

The following measures are to be taken to protect the RO device from microbial contamination and after extended stoppages of operation:

- We recommend rinsing the device for five minutes after extended stoppages of operation, such as at weekends or holidays.
- Please observe the provisions in the operating manual of the external pre-filter used.

1.6 Description of process

The semi-permeable reverse osmosis membrane separates the feedwater, which is supplied under high pressure (approx. 8 bar), into desalinated purified water (permeate) and the salty waste water (concentrate).

The percentage ratio between the permeate produced and the amount of raw water used is called the WCF yield (%). The RO device is factory-configured for a WCF of about 50%.

Device on and off switching points:

- Automatic RO operation via pressure switch: 0.5 and 2.0 bar.
- Note that pressure fluctuations may lead to the device switching off.
- Once the connected consumer starts drawing purified water, the actual pressure drops below the set "RO starting pressure" and the RO unit starts producing.

1.7 Requirements for installation

1.7.1 Installation site of the RO unit/requirements

Choose a place to set up the device that allows simple connection to the water supply network.

There must also be a drain connection and a separate mains socket (100–230 V, 50 Hz) near by. The device must be electrically connected to a grounded mains socket.

The voltage supply and the requisite feedwater pressure must be guaranteed stable.

National guidelines and regulations:

Please observe the general standards, guidelines and technical data.

Frost protection and ambient temperature:

The installation site must be free of frost and kept free of chemicals, paint, solvents and fumes.

If the municipal water supply is treated with oxidising disinfectants (such as chlorine, chlorine dioxide, or similar), then an activated carbon filter must be installed upstream of the device.

Further pre-treatment may be necessary depending on the feedwater quality.

Quality of the supply pipeline:

Observe: All materials used in the permeate area must be corrosion-resistant.

Electrical interference:

Interference emissions (voltage peaks, high-frequency electromagnetic fields, spurious and voltage oscillations, etc.) of the surrounding electrical installation may not exceed the maximum values set in the standard EN 61000-6-4.

1.7.2 Requirements of the feedwater

The water fed into the device must be cold water that conforms to the statutory drinking water requirements and the quality requirements in table 6.

Analysis of the local feedwater:

Any deviation from proper use, such as desalination of feedwater of impermissible quality (non-drinking water), may result in irreversible damage to health or property (via microbial contamination of the RO device, for example).

1.7.3 Operating pressure

For optimal functioning, the device requires a certain minimum operating pressure. In addition, the water pressure should not exceed the maximum permissible pressure.



Observe: The feedwater pressure must always be between 1.0 and 4.0 bar (Fig. 3) as measured directly at the RO unit.

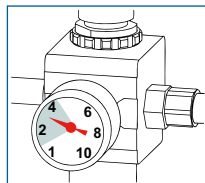


Fig. 3: Pressure display of the feedwater.



Attention: If the pressure exceeds 4.0 bar, then a pressure reducing valve must be installed.



Attention: If the pressure drops below 1.0 bar, then a pressure booster system must be installed upstream.

- We recommend installing a stop valve at the infeed side of the device to enable the feedwater flow to be interrupted for service purposes.
- The operator's installation should use at least DN 10. Smaller feed pipes may result in operational stoppage due to insufficient water pressure or flow rates (e.g. when flushing the reverse osmosis membranes).
- Installing a pressure reducer may reduce the flow rate.

2 Installation and assembly**Unpacking the RO device:**

Remove the device from the packaging and check that the delivery is complete and undamaged.

Hydraulic installation:

Observe the general installation regulations for creating water installations and the general hygiene conditions.

- Read the technical data, operating notes, and safety notes first and observe them during installation.
- Use only flexible hoses approved under DVGW W 543 to connect the device.
- Observe the installation dimensions and bend radii when installing accessories (such as hoses, connection sets, etc.).
- The BWT THERO 90PRO device is to be set up and operated with installed magnet plates.
- The device may not be rigidly connected to the water supply network.

Connecting to the water pipe (Fig. 4):

- The hoses of the device are to be connected free of tension.
- Verify that the water connections are water-tight.
- The concentrate line is to be led to the on-site wastewater connection with an air gap and then connected there. The flexible hoses may not exhibit any constriction in cross section. During installation, ensure that the concentrate and permeate lines are correctly connected.

Installation suggestion:

- 1 BWT THERO 90PRO reverse osmosis
- 2 Particle pre-filter (not included in delivery but recommended to protect the RO diaphragm)
- 3 Permeate outfeed 1/4" for connection to water tap
- 4 Concentrate outfeed 1/4" (for connection to the drain)
- 5 Feedwater inlet 3/4"
- 6 Alternative position for the drain connection
- 7 Water tap
- 8 Observe: 7" installation height
- 9 PE mains plug type IEC 320
- 10 Hot feed water
- 11 Cold feed water

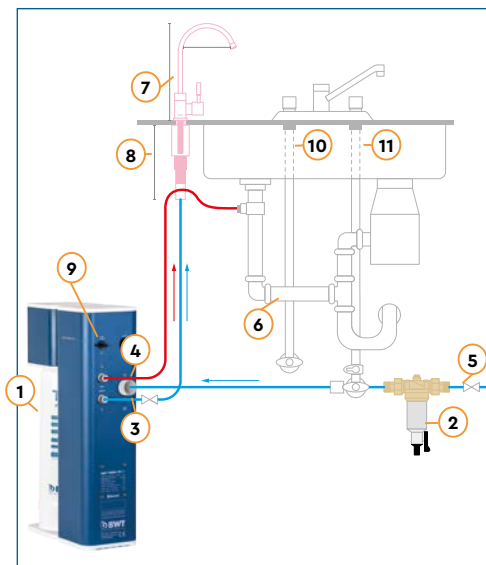


Fig. 4: Installation diagram / example

Notes on start-up:

- Connect the mains plug of the RO device to a grounded mains socket (100–230 V, 50 Hz).
- Please also observe the provisions in the operating manual of the external pre-filter used.
- The water hardness may vary in different places.



Note: Before using the RO unit, we recommend checking the water pre-treatment (e.g. in-house water softening system, central water processing of waterworks). This measure is necessary to improve the efficiency and service life of your RO diaphragm.

- Connect all hoses and check for water-tightness.
- Open the cock for the feedwater supply.
- Insert the mains plug (230 V / 50 Hz).
- Note: Please discard the permeate produced during the first ten minutes after each new installation, initial start-up, or diaphragm change.



Note: Reduction of the temperature by 1 °C results in a reduction of the permeate output of the membranes of approximately 3 percent.

3 Operating the reverse osmosis unit

3.1 Switching on the RO device

- The RO device must be connected to the hoses (see the installation diagram Fig. 4) and the electrical socket.
- Use the device switch (situated on the rear of the device) to switch on the device BWT THERO 90PRO. A green LED (Fig. 5) indicates that the RO unit is switched on (POWER ON).

→ Reverse osmosis was activated.



Fig. 5: Switch on the RO device

3.2 Setting the water quality using the blending valve



Observe: The standard setting at the filter head is "0" (no blending function).

The filter heads for adjusting the blend are located under the top front cover plate. The quantity of bypass water can be adjusted on the integrated RO filter head. The bypass/blend is adjusted by turning the cap. Press button "a" and turn the cap right or left until the desired blend quantity is reached. The bypass setting of the RO filter head can be set continuously, regardless of the locking positions 0,1,2,3 displayed.



Fig. 6: Setting head for water blending.

3.3 Removing/installing a new RO cartridge

- Switch off the BWT THERO 90PRO (On/Off switch on back of device). Ensure that the status LED is no longer lit.
- Take the new filter cartridge out of the packaging and remove the hygiene cap.
- Before installing a filter cartridge, write the date of installation and the date of replacement (no more than 12 months later) on its product label.
- Tip the coffeebox backwards slightly to gain better access to the filter cartridge to be replaced.
- Turn the old filter cartridge clockwise to remove it from the filter head.
- Turn the new filter cartridge anticlockwise to insert it into the filter head.
- Switch the device on again and check the system for leaks.



Note: After each RO cartridge change, run the device for 5 minutes to rinse the new cartridge (approx. 5 l).



Fig. 7: Removing / installing the RO cartridge



Fig. 8: RO cartridge change

3.4 Installation and operation of the BWT RO app



Observe: The BWT THERO 90PRO app is only available for the BWT THERO 90PRO.

BWT THERO 90PRO (basic version) does not contain any app control.

3.4.1 Installation of the app

If the BWT RO app is not yet installed on your mobile phone, please scan the QR code below. This will take you to the website where you can download the app. The app can also be downloaded under the following internet address: www.bwt-wam.com



NOTE: Ensure that Bluetooth is activated on your end device.

When installing the app for the first time on an iOS end device, download the app and proceed as follows to activate it: Settings / General / Device Management / BWT Aktiengesellschaft / Trust BWT Aktiengesellschaft
The app is a purely offline application. No data is transmitted to BWT.

3.4.2 Operating the app

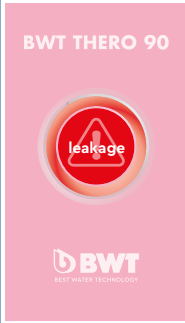
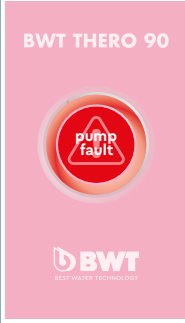
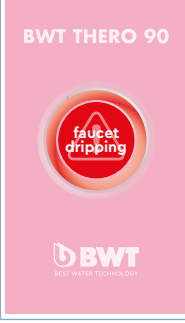
You will find the operating instructions for the BWT RO app attached (Appendix).

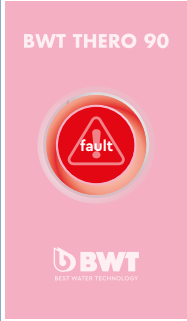
4 Troubleshooting

4.1 Overview of the status and alert LED

Status:	LED Farbe:	Gerätezustand:
working	green light	RO device in production
ready	green flashing light	Device is on standby
connected to App	blue light	Mobile device connected to RO via Bluetooth
Service	red light	Service required (Chapter 5.5.4)
Fault	red light (constant or flashing)	Error message displayed in app (Chapter 6.2)

4.2 Trouble shooting

App screen	Error	Cause	Remedy
	Water leak inside the device Inlet valve closes automatically.	Leak or condensation inside the device	Disconnect device from electricity and water supply Check pump and pipes, dry leak sensor
	Pump motor no longer working	Motor overheating protection triggered	The device will restart automatically when the motor has cooled down. If this error appears after initial installation and does not disappear, please check the electricity supply to the booster pump.
	Pump motor no longer working	No or insufficient raw water input	Check pre-filter for blockage and replace if necessary Check check valves, open if necessary, and check flow pressure (RO working range: 1 to 4 bar)
		Inlet water pressure too low	Install pressure booster if necessary
	There is dripping on the water pipe or the tap is dripping	Faucet is not completely closed or permeate line is leaking.	Faucet is not completely closed or permeate line is leaking.

App screen	Error	Cause	Remedy
	Device not working	Pressure sensor for permeate is defective or has no power supply	Check power supply and, if necessary, replace the pressure sensor or inform service staff.

5 Repairs and maintenance

5.1 Maintenance and wearing parts

You have purchased a product that is durable and easy to service. However, all technical equipment requires regular servicing so that it continues to function properly. If the product malfunctions during the warranty period, contact your contract partner or the installation company, and quote the unit type and serial number.



Observe: Please also observe the provisions in the operating manual of the installed external pre-filter.

Before performing work on electrical components or opening the housing, it is mandatory that the mains plug be pulled and both the water infeed and the permeate line be closed off in order to guarantee that the unit is voltage-free.

Whenever maintenance is performed, the connection lines and the device must be checked for damage.



Note: Only customer service may replace the wearing parts (e.g. after a faulty pump).

Replacement of wearing parts:

Maintenance work:	Responsible:	Recommended maintenance interval:
General visual inspection	Customer	Monthly
Leak-tightness inspection	Customer	Monthly
Cleaning with a damp cloth	Customer	As necessary
Conductivity (with external measuring device)	Customer/ service	At least once per year
Replacement of the external pre-filter insert (particle filter [optionally available])	Customer/ service	Depending on the pre-filter used
Replacement of the RO cartridge	Service	Once per year (recommended)



Observe: In accordance with BVG A3 (VBG4), the unit must be tested for electrical safety every 4 years.

The BWT THERO 90PRO reverse osmosis unit is subject to the Pressure Equipment Directive 2014/68/EU from 27 June 2014. The RO unit fulfils the requirements set forth in article 3, section 3, and was designed and manufactured according to the applicable engineering good practices.

The BWT THERO 90PRO device does not have a CE mark according to article 6, section 5, of the directive 2014/68/EU, but the attached CE Declaration of Conformity is valid.

5.2 Cleaning

You can clean your reverse osmosis unit using a moist cloth and a mild cleaning agent.

To protect the surfaces of the device, do not use any bleach, solvent or alcohols.

5.3 Note on RO cartridge replacement

If the permeate flow rate drops off or the conductivity of the permeate rises, the diaphragm element must be replaced. Furthermore, we recommend replacing the diaphragm every 12 months.

Further information on replacing the RO cartridge can be found in Sec. 3.3.

5.4 Disposal



Procedure: The BWT THERO 90PRO device consists of various materials which need to be disposed of properly.

Please contact your contract partner for an expert and environmentally friendly disposal. Please do not dispose of depleted batteries in general household waste.



Any electronic parts should be disposed of only at authorised recycling centres (2012/19/EU). Observe the applicable national regulations on disposal of electric devices.

5.5 Standard IEC 60335-1

- This device is not intended to be operated by persons not in possession of full physical, sensory and mental faculties (including children) nor by persons without relevant experience or knowledge. Prior to using the device, personnel must be instructed in its use and given clear operating instructions by an expert specialist.
- The device is to be secured against access by children.
- To avoid hazards, in the event of any damage to the power cable, it must be replaced by the manufacturer, a service partner of the manufacturer or a similarly qualified person.
- Please visually inspect the water hoses for damage as described in Sec. 5.1.

6 Technical data

Technische Daten BWT THERO 90PRO		
Permeate production *1) (amount produced)	l/min (l/h)	1,5 l/min (96 l/h)
Salt rejection	%	> 98
Water conversion factor WCF (factory setting) *2), *3)	%	ca. 50% @ 15 °C
Min. Inlet flow	l/min (l/h)	min. 3,4 l/min; min. 200 l/h
Concentrate (Drain)	l/min (l/h)	ca. 1,6 l/min; ca. 96 l/h
Feed water pressure	MPa (bar)	0,1 ... 0,4 MPa (1 ... 4 bar)
Feed water, ambient temperature (min./max.)	°C	5 ... 30 / 5 ... 40
Iron + manganese (Fe+Mn)	mg/l	< 0,05
Silicate (SiO ₂)	mg/l	< 15
Salt content (TDS)	mg/l	< 1000
Blockage index (SDI)	%/min	< 3
Oxidising substances	mg/l	< 0,05
Protection class	IP	54
Electrical connection / fuse / internal fuse	V/Hz/A	100–230 / 50 / 10 / 1,25 A (Typ T / „slow burn“)
Electrical power consumption (operation/standby)	W	90W / < 3W
Plug standard (grounded PE mains plug)		IEC-320 socket
Feedwater, permeate and concentrate connections	inch/inch/ inch	3/4" M; 1/4" JG; 1/4" JG
Dimensions: Width, depth, height (W×D×H)	mm	120 × 243 × 451
Weight	kg	8,5
Order number for replacement cartridge:		812829

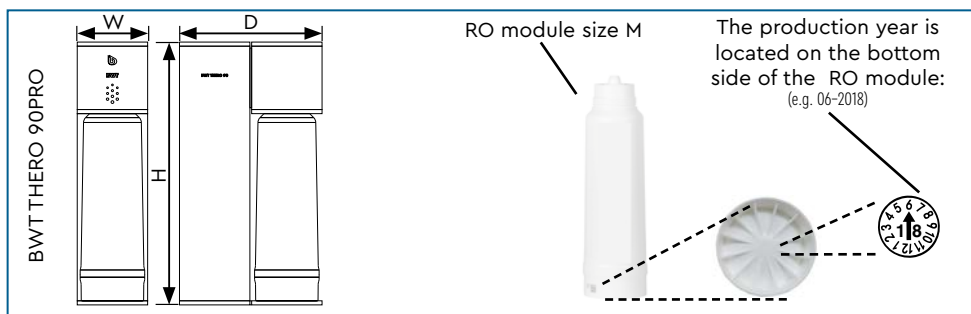
Note: The following conditions apply for determining the nominal flow rate:



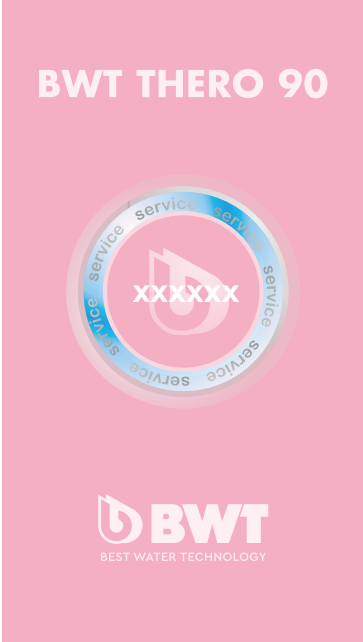
*1) The actual nominal flow rate may deviate slightly from the flow rate indicated in the table due to fluctuations in the feedwater quality, the flow pressure, the water temperature, and the permeate counter-pressure (e.g. with great permeate pumping heights).

*2) As a general rule, the manufacturer recommends pre-treating the feedwater.

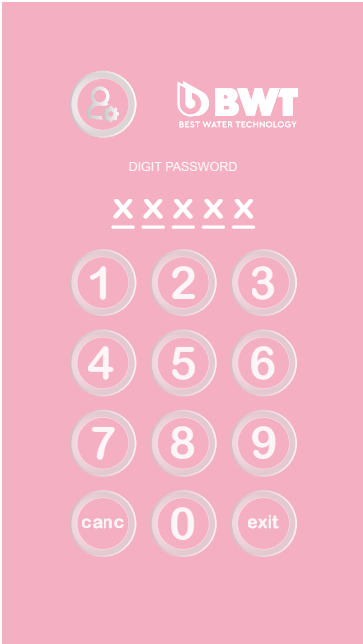
*3) The RO device is factory-configured for a WCF of about 50%.



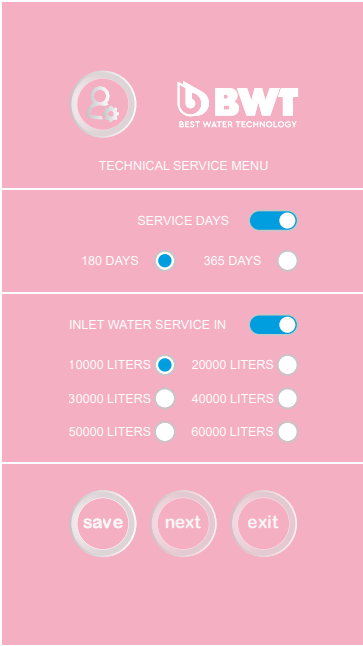
Appendix: App usage – Step 4

DE: Ist ein Service/Filterkerzentausch durchzuführen, erscheint diese Anzeige im Hauptmenü. Die Status LED leuchtet rot.	EN: If service/filter replacement is due, this display will appear in the main menu. The status LED is lit in red.	 The image shows a pink rectangular screen. At the top, the text 'BWT THERO 90' is displayed in white. In the center, there is a circular graphic with a blue and white border containing the word 'service' repeated. Inside the circle, the text 'XXXXXX' is shown in white. At the bottom, the BWT logo is visible, consisting of a stylized 'B' and 'W' followed by 'T', with 'BEST WATER TECHNOLOGY' written below it.	
FR: S'il faut effectuer un entretien/remplacement de bougie filtrante, cet affichage apparaît dans le menu principal. La LED de statut s'allume en rouge.	IT: Se si deve effettuare la manutenzione/la sostituzione della cartuccia filtrante, compare questa indicazione nel menu principale. Il LED di stato si illumina in rosso.		
NL: Als er tijdens een onderhoudsbeurt een filterpatroon vervangen moet worden, verschijnt deze melding in het hoofdmenu. De rode status LED brandt.	DA: Skal der foretages service/udskiftning af filter, vises denne visning i hovedmenuen. Status-LED lyser rød.	ES: Si debe llevarse a cabo un servicio de asistencia técnica/cambio de la bujía filtrante, aparece esta imagen en el menú principal. El LED de estado es de color rojo.	PT: Se tiver de ser realizada uma manutenção/substituição de cartucho filtrante, essa indicação é exibida no menu principal. O LED de estado está vermelho.
PL: Jeżeli konieczny jest serwis/wymiana wkładu filtra, pojawia się to wskazanie w menu głównym. Dioda LED stanu świeci na czerwono.	HU: Ha szervizelni kell a készüléket vagy ki kell cserélni a szűrőpatront. Ez a kijelzés jelenik meg a főmenüben. A státuszjelző LED pirosan világít.	RU: Если требуется обслуживание/замена фильтрующего элемента, в главном меню появится соответствующая надпись. Индикатор питания светится красным светом.	ZH: 如果需要进行维修/滤芯更换,会显示在主菜单中。状态LED呈红色亮起。

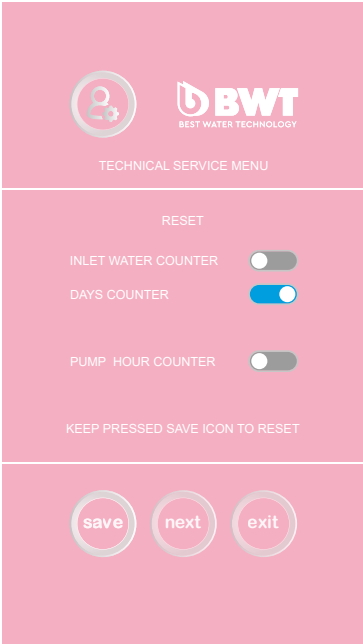
Appendix: Service Menu settings – Step 1

DE: Um in das Service-menü zu gelangen, geben Sie folgendes Passwort ein: 05310 ► Wurde ein Wert geändert, muss die „save“ Taste gedrückt werden, dabei ertönt ein akustisches Signal. ► Mit der „next“ Taste kommt man eine Ebene weiter. ► Mit der „exit“ Taste verlässt man das Service Menü und kommt zur Anzeige mit den Betriebsdaten.	EN: To access the service menu, enter the following password: 05310 ► If you change a value, you must press the "save" key; an acoustic signal will sound. ► The "next" key takes you to the next level. ► By pressing the "exit" key, you will leave the service menu and see a display of the operating data	
FR: Pour accéder au menu de service, entrez le mot de passe suivant : 05310 ► Si une valeur a été modifiée, il faut appuyer sur la touche «save» (sauvegarder), et un signal sonore retentit. ► Avec la touche «next» (suivant), vous accédez au niveau suivant. ► Avec la touche «exit» (sortie), vous quittez le menu Service et les données de fonctionnement s'affichent	IT: Per accedere al menu di manutenzione, inserire la seguente password: 05310 ► Se è stato modificato un valore, si deve premere il tasto "save" e viene emesso un segnale acustico. ► Con il tasto "next" si aumenta di livello. ► Con il tasto "exit" si esce dal menu di manutenzione e si visualizzano i dati di funzionamento.	
NL: Om in het servicemenu te komen, voert u het volgende wachtwoord in: 05310 ► Wanneer er een waarde is gewijzigd, moet u op „Save“ drukken, waarbij er tegelijk een geluidssignaal weerklinkt. ► Met de toets „Next“ komt u een niveau verder. ► Met de toets „Exit“ verlaat u het servicemenu en komt u bij de weergave van de gegevens van de bedrijfsstand.	DA: For at komme til servicemenüen skal du indtaste følgende adgangskode: 05310 ► Hvis en værdi er blevet ændret, skal du trykke på „save“-knappen, der lyder samtidig et akustisk signal. ► Ved hjælp af „next“-knappen kommer du et niveau videre. ► Du forlader servicemenüen ved hjælp af „exit“-knappen og kommer derefter til visningen med driftsdata.	ES: Para acceder a dicho menú, introduzca la siguiente contraseña: 05310 ► Si se ha modificado un valor, se tiene que pulsar la tecla «save» y luego se oye una señal acústica. ► Con la tecla «next» se accede al siguiente nivel. ► Con la tecla «exit», se abandona el menú de asistencia técnica y se regresa a la pantalla con los datos de servicio. PT: Para aceder ao menu de assistência, introduza a seguinte palavra-passe: 05310 ► Se tiver sido alterado um valor, é necessário premir a tecla "save" (guardar); durante este processo é emitido um sinal acústico. ► A tecla "next" (seguinte) premir avançar um nível. ► Com a tecla "exit" (sair) abandona-se o menu de assistência, e acede-se à indicação com os dados de serviço.
PL: Aby przejść do menu serwisowego, wprowadź następujące hasło: 05310 ► Jeżeli jakaś wartość została zmieniona, należy nacisnąć przycisk „save“, przy tym rozlegnie się sygnał dźwiękowy. ► Naciskając przycisk „next“, przejdiesz do kolejnego okna. ► Naciskając przycisk „exit“, możesz wyjść z menu serwisowego i przejść do ekranu z danymi eksploatacyjnymi.	HU: Ha a szervizmenübe szeretnék jutni, az alábbi jelszót kell beadni: 05310 ► Ha megváltoztatjuk az értéket, akkor nyomjuk meg a „save“ gombot, közben hangjelzés hallatszik. ► A „next“ gombbal egy szinttel tovább jutunk. ► Az „exit“ gombbal hagyjuk el a szervizmenüt és jutunk az üzemi adatok kijelzéséhez.	RU: Чтобы войти в сервисное меню, надо ввести следующий пароль: 05310 ► Каждый раз после изменения значения необходимо нажать кнопку save и дождаться звукового сигнала. ► С помощью кнопки next осуществляется переход на следующий уровень. ► С помощью кнопки exit можно выйти из сервисного меню и вернуться к экрану с рабочими параметрами. ZH: 要进入服务菜单, 请输入以下密码: 05310 ► 如果对数值进行了修改, 须按下“save”键, 保存时会发出信号音。 ► 点击“next”会进入下一项。 ► 点击“exit”则离开菜单, 显示运行数据。

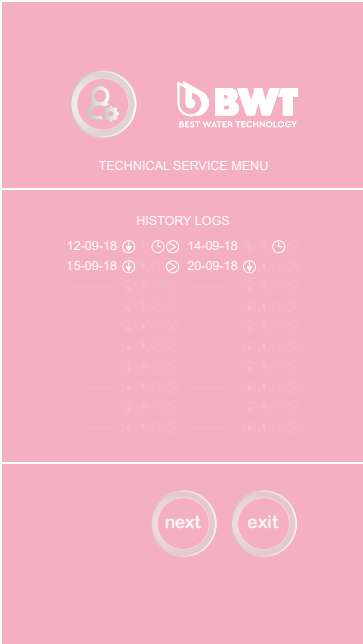
Appendix: Service Menu settings – Step 2

DE: Menü zur Einstellung der Servicetage und der Vorfilterkapazität ► Gewünschten Wert einstellen ► „save“ drücken, auf akustisches Signal warten ► „next“ oder „exit“ drücken	EN: Menu for setting the service days and pre-filter capacity ► Set the desired value ► Press "save" and wait for acoustic signal ► Press "next" or "exit"		
FR: Menu pour le réglage des jours de service et de la capacité du filtre en amont ► Régler la valeur souhaitée ► Appuyer sur « save » et attendre qu'un signal sonore retentisse ► Appuyer sur « next » ou « exit »	IT: Menu per l'impostazione dei giorni di manutenzione e della capacità del prefiltro ► Impostare il valore desiderato ► Premere "save" e attendere il segnale acustico ► Premere "next" o "exit"	ES: Menú para ajustar los días de asistencia técnica y la capacidad del prefiltro ► Ajustar el valor deseado ► Pulsar «save» y esperar a la señal acústica ► Pulsar «next» o «exit»	
NL: Menu voor het instellen van de servicedagen en de capaciteit van het voorfilter ► De gewenste waarde instellen ► Druk op „Save“ en wacht op het geluidssignaal ► Druk op „Next“ of op „Exit“	DA: Menu til indstilling af servicedage og forfilterkapacitet ► Indstil den ønskede værdi ► Tryk på „save“, vent på det akustiske signal ► Tryk på „next“ eller „exit“	PT: Menu para ajuste dos dias de serviço e da capacidade dos pré-filtros ► Ajustar o valor pretendido ► Premir "save", aguardar o sinal acústico ► Premir "next" ou "exit"	
PL: Menu do ustawiania dni serwisowych i pojemności filtra wstępnego ► Ustaw żadaną wartość ► Naciśnij „save”, poczekaj na sygnał dźwiękowy ► Naciśnij „next” lub „exit”	HU: A szerviznapok és az előszűrő kapacitás beállítására szolgáló menü ► Adjuk be a kívánt értéket. ► Nyomjuk meg a „save” gombot és várjuk meg a hangjelet. ► Nyomjuk meg a „next” vagy „exit” gombot.	RU: Меню настройки дней сервисного обслуживания и фильтра предварительной очистки. ► Установить необходимое значение. ► Нажать кнопку save и дождаться звукового сигнала. ► Нажать кнопку next или exit.	ZH: 设备维护间隔和预过滤器流量的菜单 ► 按需设置数值 ► 点击“save”，等待刷新信号。 ► 点击“next”或“exit”

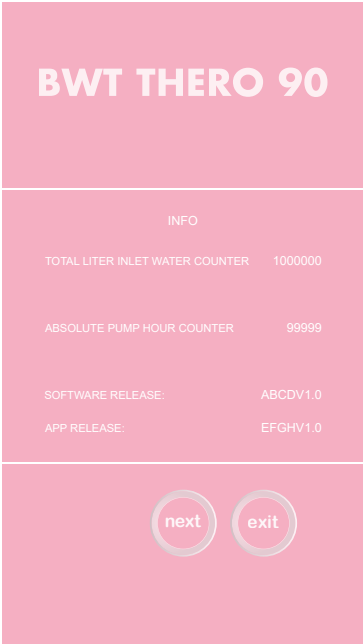
Appendix: Servie Menu settings – Step 3

DE: Menü zum Zurücksetzen der Zählereinstellungen ► Betroffenen Zähler zurücksetzen ► „save“ drücken, auf akustisches Signal warten ► „next“ oder „exit“ drücken Um den Pumpenbetriebsstundenzähler zurückzusetzen, muss das Servicemenü mit folgendem Passwort geöffnet werden: 19274	EN: Menu for resetting the meter settings ► Reset the relevant meter ► Press "save" and wait for acoustic signal ► Press "next" or "exit" To reset the pump operation hour meter, the service menu must be opened using the following password: 19274	
FR: Menu de réinitialisation des réglages du compteur ► Réinitialiser le compteur concerné ► Appuyer sur «save» et attendre qu'un signal sonore retentisse ► Appuyer sur «next» ou «exit» Pour réinitialiser le compteur d'heures de fonctionnement de la pompe, le menu de service doit être ouvert avec le mot de passe suivant : 19274	IT: Menu per ripristinare le impostazioni del contatore ► Ripristinare il rispettivo contatore ► Premere "save" e attendere il segnale acustico ► Premere "next" o "exit" Per ripristinare il contatore delle ore di esercizio della pompa si deve aprire il menu di manutenzione con la seguente password: 19274	
NL: Menu voor het resetten van de instellingen van de tellers ► De tellers in kwestie resetten ► Druk op „Save“ en wacht op het geluidssignaal ► Druk op „Next“ of op „Exit“ Om de teller voor de bedrijfsuren van de pompte resetten, moet het servicemenu worden geopend met het volgende wachtwoord: 19274	DA: Menu til nulstilling af tællerindstillinger ► Nulstil berørte tællere ► Tryk på „save“, vent på det akustiske signal ► Tryk på „next“ eller „exit“ For at nulstille pumpens driftstimetæller skal servicemenue åbnas med adgangskoden: 19274	ES: Menú para restablecer los ajustes del contador ► Restablecer los números afectados ► Pulsar «save» y esperar a la señal acústica ► Pulsar «next» o «exit» Para restablecer las horas de servicio de la bomba, el menú de asistencia técnica debe abrirse con la siguiente contraseña: 19274
PL: Menu do resetowania ustawień licznika ► Zresetuj dany licznik ► Naciśnij „save”, poczekaj na sygnał dźwiękowy ► Naciśnij „next” lub „exit” Aby zresetować licznik roboczo godzin pompy, należy otworzyć menu serwisowe przy pomocy następującego hasła: 19274	HU: A szerviznapok és az előszűrő kapacitás beállítására szolgáló menü ► Adjuk be a kívánt értéket. ► Nyomjuk meg a „save” gombot és várjuk meg a hangjelet. ► Nyomjuk meg a „next” vagy „exit” gombot.	PT: Menu para repor as definições dos contadores ► Repor o respetivo contador ► Premir "save", aguardar o sinal acústico ► Premir "next" ou "exit" Para repor o contador de horas de serviço da bomba, é necessário abrir o menu de assistência com a seguinte palavra-passe: 19274 ZH: 重置计数器的菜单 ► 重置相关计数器 ► 点击“save”，等待刷新信号。 ► 点击“next”或“exit” 如需重置水泵计时器，请在服务菜单中输入下列密码：19274

Appendix: Servie Menu settings – Step 4

DE: Anzeige der Reset-Historie ⬇️ Eingangswasserzähler ⬆️ Ausgangswasserzähler 🕒 Servicetage 🕒 Pumpenbetriebsstunden	EN: Display of the rest history ⬇️ Inlet water meter ⬆️ Outlet water meter 🕒 Service days 🕒 Pump operation hours	 The screenshot shows the 'TECHNICAL SERVICE MENU' with a BWT logo. Below it, 'HISTORY LOGS' are listed for dates 12-09-18, 14-09-18, 15-09-18, and 20-09-18, each with a circular arrow icon. At the bottom are 'next' and 'exit' buttons.	
FR: Affichage de l'historique des réinitialisations ⬇️ Compteur de l'eau d'entrée ⬆️ Compteur de l'eau de sortie 🕒 Jours de service 🕒 Heures de fonctionnement de la pompe	IT: Visualizzazione della cronologia dei ripristini ⬇️ Contaltri dell'acqua in entrata ⬆️ Contaltri dell'acqua in uscita 🕒 Giorni di manutenzione 🕒 Ore di esercizio della pompa	ES: Pantalla del historial de restablecimientos ⬇️ Contador de agua de entrada ⬆️ Contador del agua de salida 🕒 Días de asistencia técnica 🕒 Horas de servicio de la bomba	PT: Visualização do histórico de reposições ⬇️ contador de água de entrada ⬆️ contador de água de saída 🕒 dias de serviço 🕒 horas de serviço da bomba
NL: Weergave van de reset-geschiedenis ⬇️ teller voor het ingangswater ⬆️ teller voor het uitgangswater 🕒 servicedagen 🕒 bedrijfsuren pomp	DA: Visning af reset-historikken ⬇️ Indgangsvandmåler ⬆️ Udgangsvandmåler 🕒 Servicedage 🕒 Pumpedriftstimer	RU: Посмотреть журнал сбросов. ⬇️ Счётчик воды на входе ⬆️ Счётчик воды на выходе 🕒 Дни сервисного обслуживания 🕒 Часы работы насоса	ZH: 显示重置历史 ⬇️ 进水水表 ⬆️ 出水水表 🕒 维护间隔天数 🕒 水泵运行小时数
PL: Wskaźnik historii resetowania ⬇️ Wodomierz wejściowy ⬆️ Wodomierz wyjściowy 🕒 Dni serwisowe 🕒 Roboczoegodziny pompy	HU: A reset előzménylistájának kijelzése ⬇️ bemeneti víz számláló ⬆️ kimeneti víz számláló 🕒 szervizelési napok 🕒 szivattyú üzemi órák		

Appendix: Servie Menu settings – Step 5

DE: Software Release: Aktuelle Firmware, des verbauten Boards im Gerät. APP Release: Aktuelle Version der APP am Handy	EN: Software release: Current firmware of the board installed in the device. App release: Current version of the app on the mobile phone		
FR: Version du logiciel: Micrologiciel actuel de la carte installée dans l'appareil. Version de l'application : Version actuelle de l'application sur le téléphone portable	IT: Software release: Firmware attuale, scheda integrata nell'apparecchio. APP release: Versione attuale dell'APP nel cellulare	ES: Lanzamiento del software: firmware acnformación general tual de la placa montada en el aparato. Lanzamiento de la aplicación: versión actual de la aplicación en el móvil	
NL: Software release: De actuele firmware van het in het toestel ingebouwde board APP release: De actuele versie van de smartphone-app	DA: Software Release: Aktuel firmware, på det installerede board i produktet. APP Release: Aktuell version af appen på mobiltelefonen	PT: Versão do software: Firmware atual, da placa instalada no aparelho. Versão da APP: Versão atual da APP no telemóvel	
PL: Wersja oprogramowania: Aktualne oprogramowanie układowego płytki zainstalowanej w urządzeniu. Wersja aplikacji: Aktualna wersja aplikacji na telefonie komórkowym	HU: Szoftver release: A készülékbe beépített board aktuális firmware-je Alkalmazás release: A mobil alkalmazás aktuális változata	RU: Software Release: версия прошивки устройства. APP Release: версия программы, установленной на мобильном телефоне	ZH: 软件版本: 当前固件, 设备主板所安装的版本。 App版本: 手机上App的当前版本



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