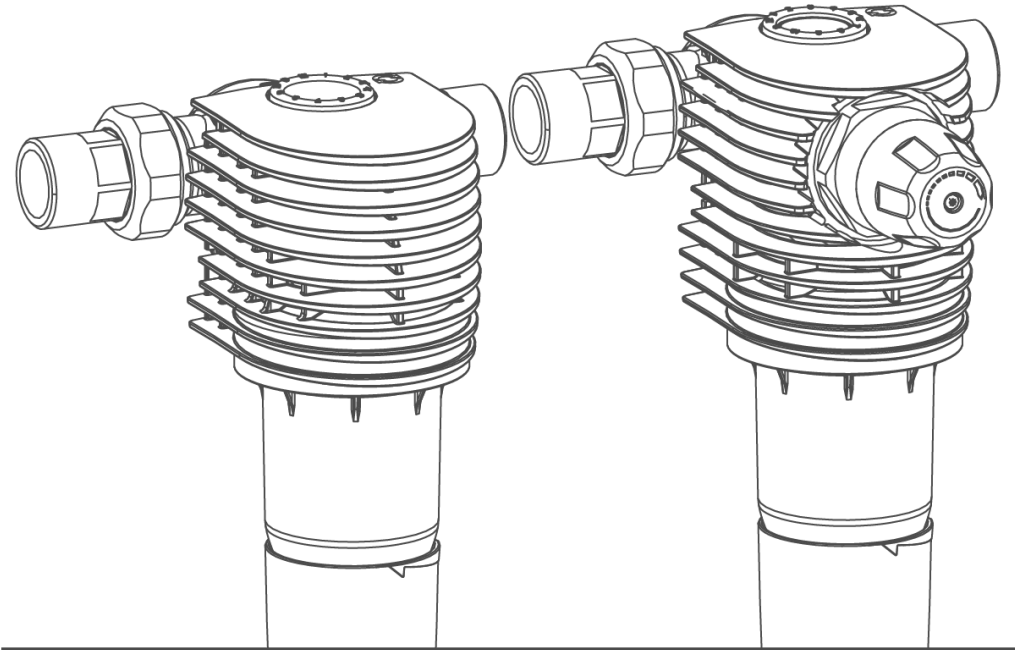


We understand water.



Filter | Backwash filter BOXER RX/RDX

Operation manual

grünbeck

**Central Contact  
Germany**

**Sales**

Phone +49 9074 41-0

**Technical Service**

Phone +49 9074 41-333

Fax +49 9074 41-120

**Availability**

Monday to Thursday

7:00 am – 6:00 pm

Friday

7:00 am – 4:00 pm

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Subject to technical modifications.

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**Translation of the original operation manual**

Edition of the manual: May 2019

Order-no.: TD3-AR004en\_005

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# 1 About this instruction

## 1.1 Validity of the instruction

- Backwash filter BOXER RX BOXER RX and BOXER RDX

## 1.2 Other applicable documents

- The manuals of all accessories used shall apply.

## 1.3 Target group

The intended audience for this manual is comprised of specialist installers and owner-users.

## 1.4 Handover of the documents/product

- ▶ Explain to the owner/user how the product works.
- ▶ Use the manual to brief the owner/user and answer any questions.
- ▶ Inform the owner/user about the need for inspections and maintenance.
- ▶ Document the initial start-up.
- ▶ Hand over all documents to the owner/user for storage.



The owner/user must keep all documents relating to the service life of the product.

---

# 1.5 Symbols used



Instructions that you must comply with for your personal safety.



Instructions that you must comply with in order to avoid damage to property.



Important information about the product or its handling.



Work which may only be carried out by a registered specialist installer (in DE according to § 12(2) AVB Wasser V).



Entry/written documentation required.

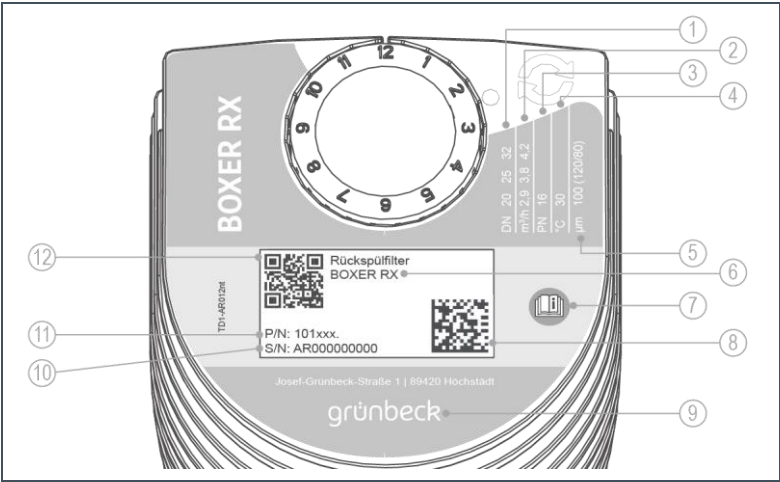
# 1.6 Typographical conventions

Designation	Header text
Handling instruction One-step or chronological sequence of steps does not matter	► Action
Handling instruction multi-step and chronological sequence of action steps important	1. First action a first step b second step 2. Second action
Result after a handling instruction	» Result

BA-TD3-AR004en\_005\_BOXER\_RX-RDX

Designation	Header text
Lists	<ul style="list-style-type: none"> <li>List item</li> <li>List sub-item</li> </ul>

1.7 Type plate



Item	Designation	Item	Designation
1	Nominal connection diameter	2	Flow rate
3	Nominal pressure	4	Max. water temperature
5	Pore size	6	Product designation
7	Observe operation manual	8	Data matrix code
9	Manufacturer	10	Serial number
11	Order no.	12	QR code ( <a href="http://www.grünbeck.de">www.grünbeck.de</a> )

## 2 Safety



**WARNING:** Contamination of drinking water due to improper handling.

- Risk of infectious diseases.
- Have the installation, start-up and six-monthly maintenance carried out by specialist installers only.

### 2.1 Safety measures

- Carefully read this manual before operating your product.
- Only operate the product if all components are installed properly.
- Observe the maintenance intervals.
- Children under the age of 8, persons with limited abilities or lack of experience must not operate or maintain the product.

### 2.2 Technical safety instructions

These instructions must be complied with for your personal safety as well as to avoid damage to property.



**CAUTION:** Type and source of danger

- Possible consequences
- Preventive measures

The following signal words are defined according to the degree of hazard:

- **DANGER** means that death or serious injury will result.
- **WARNING** means that death or serious injury can result.
- **CAUTION** means that minor bodily injuries can occur.
- **NOTE** (without warning triangle) means that property damage can occur.

## 2.3 Responsibilities of the specialist installer

- ▶ Perform all activities in accordance with all applicable standards (DIN EN 806, VDI 6023 Parts 5 – 7) and regulations.
- ▶ Instruct the owner/user in the following:
  - The function and operation of the product.
  - The maintenance of the product.
  - Possible dangers that can arise during operation of the product.

## 2.4 Responsibilities of the owner-user

- Arrange for a specialist installer to carry out installation, start-up and maintenance.
- Make sure that the required inspection and maintenance work is carried out.
- Keep this instruction.



## 3 Product description

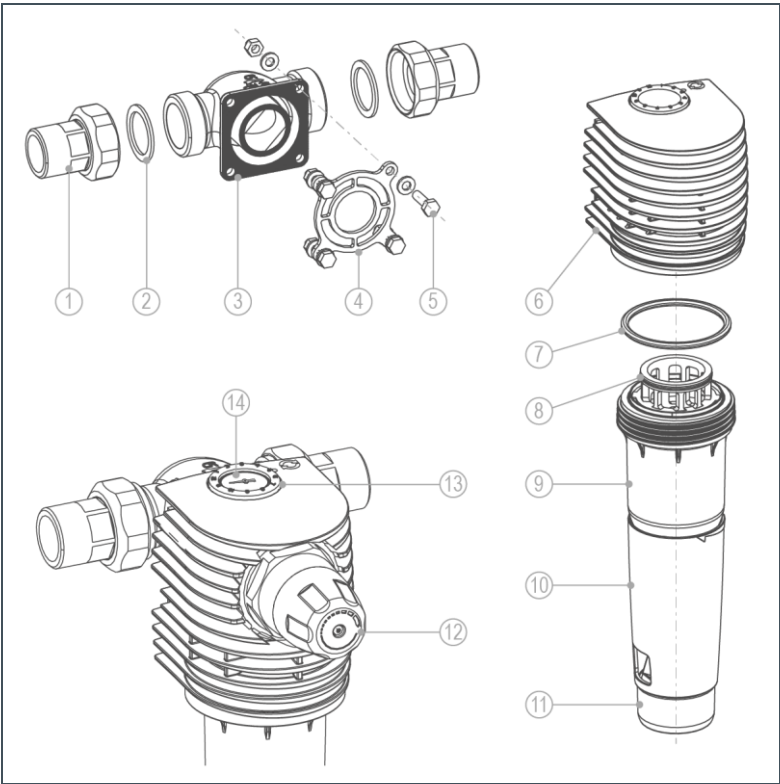
### 3.1 Intended use

- The backwash filters BOXER RX and BOXER RDX are intended for filtering drinking water and for installation into drinking water pipes according to DIN EN 806-2 (installation immediately downstream of the water meter).
- They protect the water pipes and connected water-carrying system parts from disturbances and corrosion damage due to undissolved impurities (particles), such as rust particles, sand, etc.
- The backwash BOXER RDX with pressure reducer is additionally suitable for adjusting the holding pressure on the withdrawal side.
- The filters can be used for positive pressure and negative pressure applications. The adjustment of the after-pressure on the withdrawal side, however, only works when applied in the positive pressure range.

### 3.2 Predictable misuse

- The filters are not suitable for circulation water that is treated with chemicals.
- They are neither suitable for oils, greases, solvents, soaps and other lubricating media, nor for the separation of water-soluble substances.

### 3.3 Product components



Item	Designation	Item	Designation
1	Water meter screw connection	2	Seal
3	Connection flange	4	Flange seal
5	Screw connection set	6	Filter housing
7	O-ring	8	Filter element
9	Filter cylinder	10	Backwash handwheel
11	Drain connection	12	Pressure reducer cartridge
13	Maintenance ring	14	Pressure gauge

## 3.4 Functional description

The unfiltered drinking water flows into the filter from the inlet side and then from the outside in through the filter element and to the pure water outlet. Thus, foreign particles of > 100 µm in size are retained.

Depending on their size and weight, the foreign particles either stick to the filter element or they fall straight down into the filter cylinder.


The drain is opened by turning the backwash handwheel as far as it will go, and backwashing is carried out. The water flows through the primary screen to the filter element and then flows through the filter element in reverse direction of standard filtration. Particles sticking to the filter element are detached and washed out to the drain.

In the backwash filter BOXER RDX, the flow-optimised pressure reducer, which is designed according to DIN EN 1567, enables the holding pressure on the withdrawal side to be set to 1 – 6 bar (factory setting: 4 bar).

## 3.5 Accessories



You can retrofit accessories to your product. Please contact your local Grünbeck representative or Grünbeck's headquarters in Hoechststadt for details.

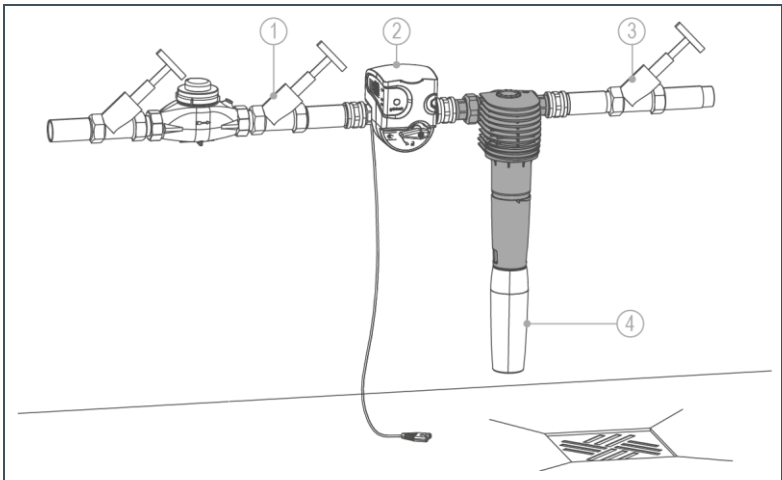
Image	Product	Order no.
	Drain connection DN 50 acc. to DIN EN 1717, with integrated siphon	188 875

# 4 Installation



The installation of a filter represents a major intervention into the drinking water system and may only be performed by a specialist installer.

The product is installed in accordance with DIN EN 806-2 and DIN EN 1717 in the cold water line downstream of the water meter and upstream of distribution lines or the devices to be protected.



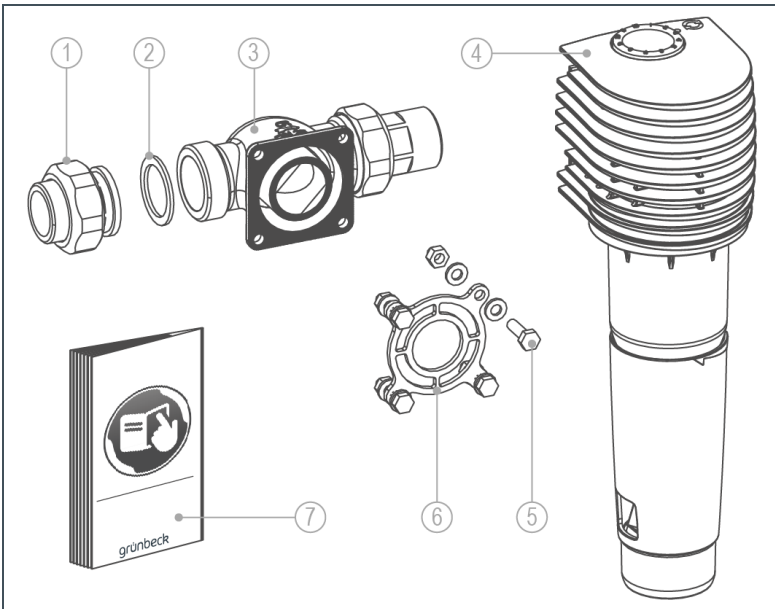
Item	Designation	Item	Designation
1	Inlet shut-off valve	2	Safety device protectliQ
3	Outlet shut-off valve	4	Drain connection

## 4.1 Requirements with regard to the installation site

- Frost-proof
- Protected against chemicals, dyes, solvents, vapours and direct sunlight

- Away from heat sources (e.g. washing machines, boilers and hot water pipes)
- Easily accessible for maintenance work
- With existing floor drain or
- With safety device e.g. protectliQ

## 4.2 Check the scope of supply



Item	Designation	Item	Designation
1	Water meter screw fittings	2	Seal
3	Connection flange	4	Backwash filter
5	Screw connection set	6	Flange seal
7	Operation manual		

- Check the scope of supply for completeness and possible damage.

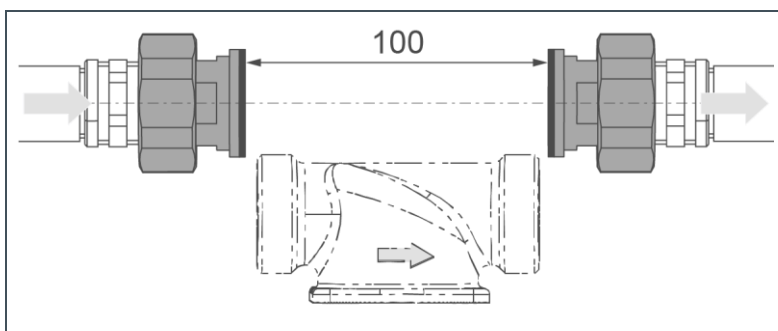
## 4.3 Installing the product

### 4.3.1 Installing connection flange

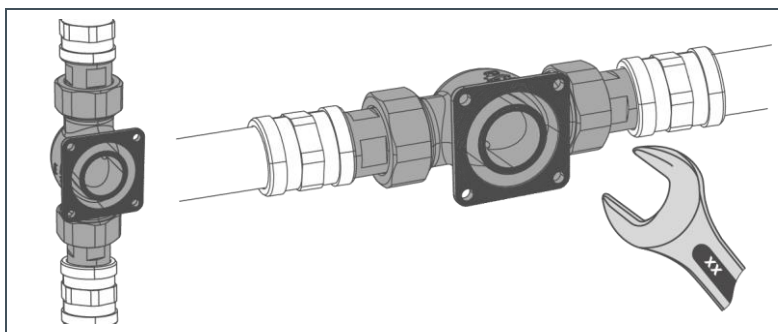


The connection flange can be mounted in a horizontal or vertical water pipe.

1. Install the water meter screw connection into the pipe.

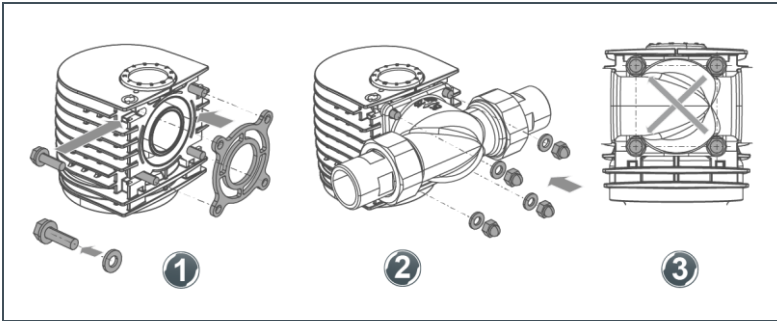


2. Position the connection flange – **Observe flow direction.**
3. Tighten the connection flange using a combination wrench at the union nuts without applying tension.



- » The connection flange is installed.

### 4.3.2 Mounting the filter

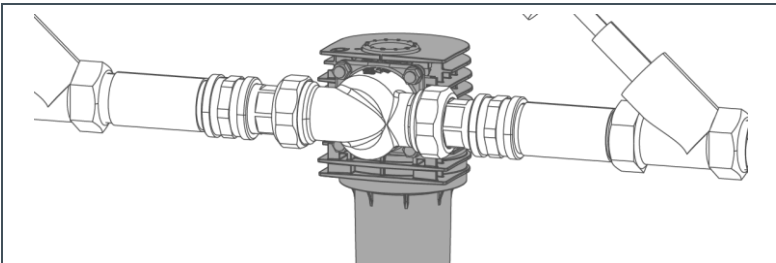


1. Insert the hexagonal screws with washers into the recesses on the filter head.
2. Slide on the flange seal.



**Do not** grease the flange seal. Greased flange seals can lead to leakage and malfunctions.

3. Screw the filter to the connection flange – tighten the nuts crosswise.



- » The filter is mounted.
- Install a drain pipe to the drain connection.



- Refer to the installation instructions for the drain connection.



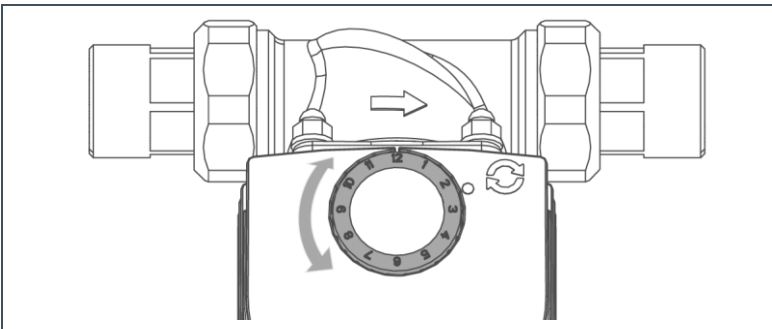
If it is not possible to install a drain pipe, the backwash water can be collected in a bucket/container.

## 5 Start-up

### 5.1 How to start up the product

1. Open the shut-off valves.
2. Open the nearest water withdrawal point after the filter as far as it will go.
  - » The filter is vented.
3. Check the filter for leaks.
4. Enter the initial start-up in the operating log.
  - » The filter is in operation.

### 5.2 Setting the month display



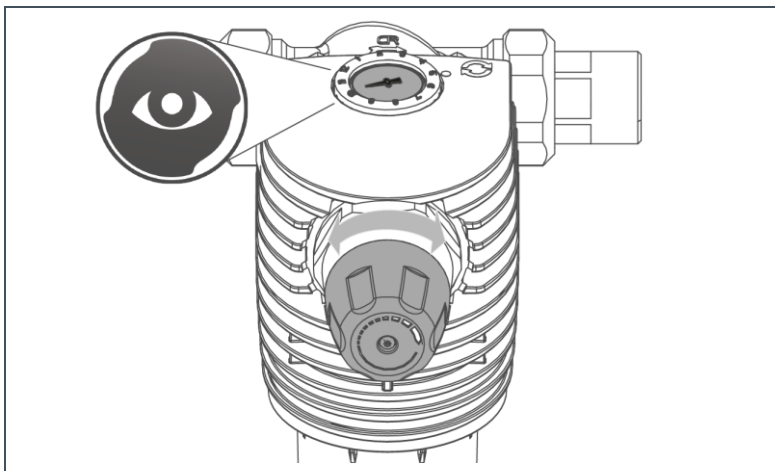
- Set the maintenance ring to the month of the next maintenance/backwash.



## 5.3 Setting the pressure reducer (BOXER RDX)

The factory setting for the pressure reducer is 4 bar.

You can change this value as follows:



1. Set the desired holding pressure on the handwheel for pressure reducer  
(turn clockwise = pressure increase,  
turn anticlockwise = pressure reduction).
2. Open and close a withdrawal point.
  - » The holding pressure adjusts itself.
3. Read off the actual holding pressure at the pressure gauge.
4. Repeat these operations until the desired pressure is reached.
  - » The required holding pressure is set.

## 6 Cleaning, inspection, maintenance



**WARNING:** Risk of contaminated drinking water if the work is not carried out properly.

- Risk of infectious diseases.
- ▶ Pay attention to hygiene when working on the product.

---

Inspection and maintenance of a filter is prescribed in the DIN EN 806-5 standard. Regular maintenance ensures trouble-free, hygienic operation.



A maintenance contract ensures that all the required maintenance work will be performed in due time.

- 
- ▶ Only use genuine spare and wearing parts from Grünbeck.

For spare parts and consumables please contact your local representative. You can find these on the Internet at [www.gruenbeck.de](http://www.gruenbeck.de).

### 6.1 Cleaning

- ▶ Only clean the outside of the product.
- ▶ Do not use any strong or abrasive cleaning agents.
- ▶ Wipe the housing with a damp cloth.



**NOTE:** Do not clean the filter with alcohol or cleaning agents containing solvents.

- These substances will damage plastic components.
  - ▶ Use a mild/pH-neutral soap solution.
-

## 6.2 Intervals

Grünbeck recommends a semi-annual and an annual maintenance according to DIN EN 806-5.

Operation	Interval	Execution
Inspection	2 months	Visual/function test, Read pressure (BOXER RDX)
Maintenance	6 months	Backwash, set maintenance ring
	Annually	Check O-rings/flat gaskets for wear, check tight fit, backwash
Maintenance	5 years	Recommended: Replace filter element, seals, backwash valve, spring pack.
	10 years	Recommended: in addition to 5-year interval – replace filter cylinder.

## 6.3 Inspection

- Check the installation for leaks and function.



We recommend backwashing after 6 months at the latest if the filter element becomes increasingly contaminated and/or the water pressure in the pipe network decreases.

## 6.4 Maintenance

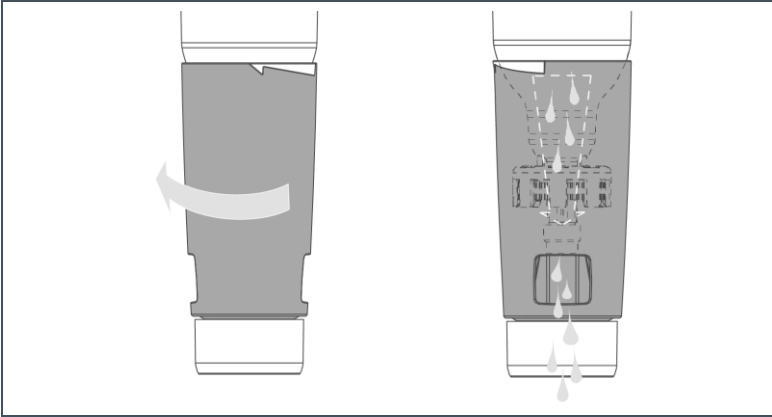


**WARNING:** Non-regular backwashing of the filter element.

- Health risk due to contamination of the drinking water.
- Observe the intervals for inspection and backwashing of the filter.

## 6.4.1 Backwashing filter

- Place a 10 l bucket under the filter (only for installations without drain connection).



1. Turn the backwash handwheel in the direction of the arrow to the left until the stop (do not turn the cylinder).
2. Hold the backwash handwheel in this position for 5 – 10 seconds.
3. Turn the backwash handwheel to the right back to its initial position – a clicking sound can be heard at the same time.
  - » The filter is backwashed.

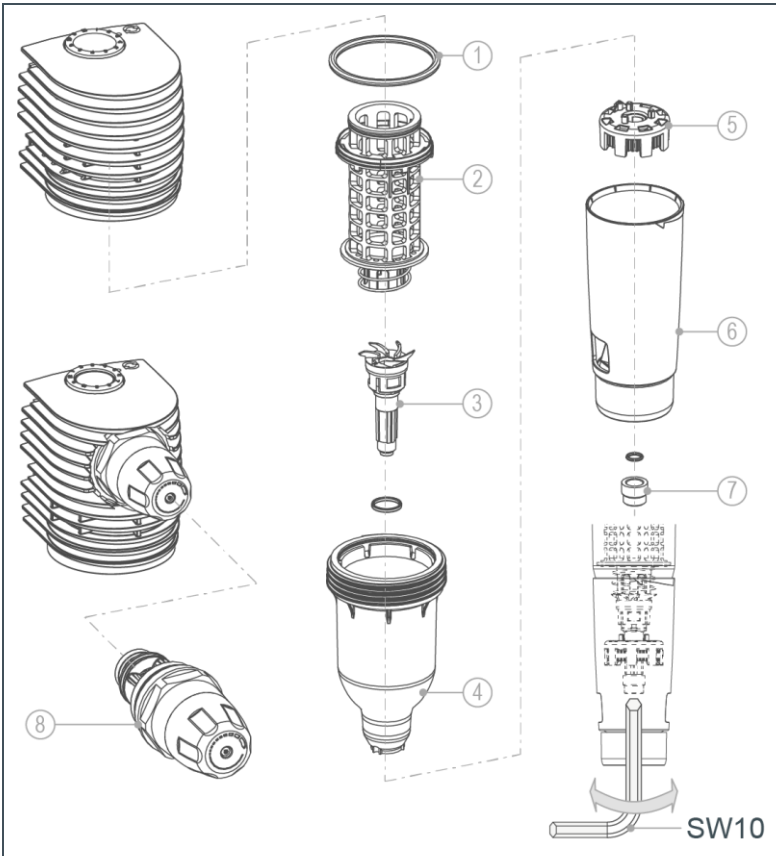


We recommend repeating this procedure 3 times.

---

## 6.4.2 Wear/spare parts

- Seals (O-rings)
  - Have the seals replaced in the event of leaks.



Item	Designation	Item	Designation
1	Cylinder O-ring	2	Filter element
3	Backwash valve incl. seal	4	Filter cylinder
5	Spring pack	6	Backwash handwheel
7	Fastening nut incl. seal	8	Pressure reducer cartridge

Tools required	Part no.
Strap wrench (for filter cylinder)	105 805
Allen key 10 (for fastening nut)	
Pipe socket wrench (for pressure reducer cartridge)	104 805

► Have defective/worn components replaced.

# 7 Malfunction



**WARNING:** Danger of contaminated drinking water due to stagnation.

- Risk of infectious diseases.
- Have malfunctions remedied immediately.

Malfunction	Explanation	Remedy
The water pressure at the withdrawal point is too low (pressure loss too high).	The shut-off valves are not open completely.	Open the shut-off valves completely.
	The filter element is fouled.	Carry out a backwash.
Taste of the treated water negatively affected.	Inappropriately long period of non-use (standstill).	Draw off water for a few minutes.
		Carry out a backwash.
Solids in the filtered water.	Inappropriately high flow rate through the filter.	Check the filter element for damage or leaks.
	Filter element damaged or not properly installed.	Contact the specialist installer or Grünbeck's technical service.
Water loss from the system.	Faulty joint.	Check the O-rings and seals for deformation or wear.
		Check the filter housing for damage.
		Have the filter housing replaced by the specialist installer.

## 8 Disposal

### 8.1 Disposal

- ▶ Comply with the applicable national regulations.

#### 8.1.1 Packaging

- ▶ Dispose of the packaging in an environmentally sound manner.

#### 8.1.2 Product



If this symbol (crossed out waste bin) is on the product, European Directive 2012/19/EU applies to this product. This means that this product or the electric and electronic components are not allowed to be disposed of in the household waste.

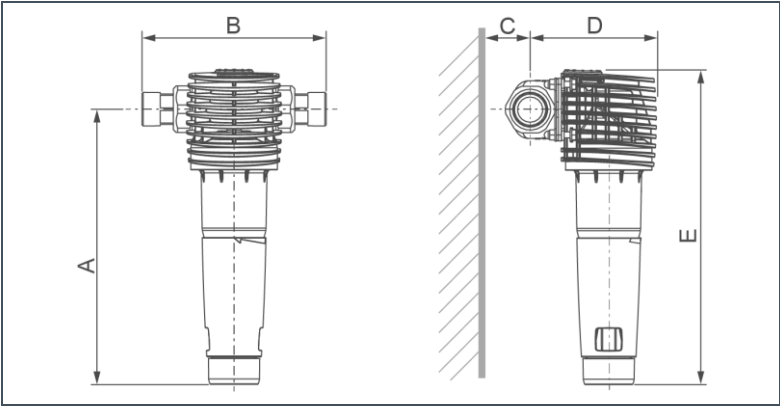
- ▶ Find out about local regulations on the separate collection of electrical and electronic products.
- ▶ Use the collection points available to you for disposing of your product.



For information on collection points for your product, contact your municipality, the public waste disposal authority, an authorised body for the disposal of electrical and electronic products or your waste collection service.

# 9 Technical specifications

## 9.1 Backwash filter BOXER RX

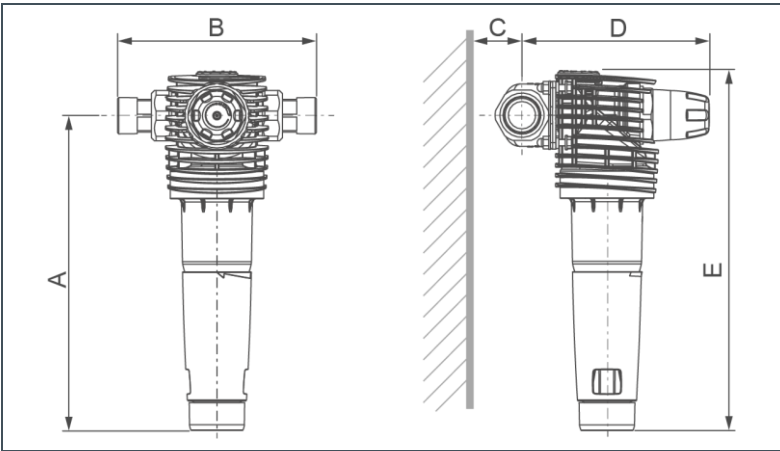


Connection data		BOXER RX		
Nominal connection diameter		DN 20 (¾")	DN 25 (1")	DN 32 (1¼")
Dimensions and weights				
A Installation height up to centre of connection	[mm]	270		
B Installation length with/without screw connection	[mm]	185/100	182/100	191/100
C Min. distance to wall	[mm]	60		
D Installation depth up to centre of connection	[mm]	115	120	125
E Total height	[mm]	310		
Empty weight	[kg]	1.7	1.9	2.2
Performance data				
Nominal flow at Δp 0.2 (0.5) bar	[m³/h]	2.9 (4.7)	3.8 (5.9)	4.2 (6.7)
K <sub>V</sub> value	[m³/h]	6.7	8.4	9.6
Pore size	[µm]	100		
Largest/smallest pore size	[µm]	120/80		
Operating pressure	[bar]	2 – 16		
Nominal pressure		PN 16		
General				
Water temperature/ambient	[°C]	5 – 30 / 5 - 40		
DVGW registration number		Test pending		
Order no.		101 510	101 515	101 520

BA-TD3-AR004en\_005\_BOXER\_RX-RDX



## 9.2 Backwash filter BOXER RDX



Connection data		BOXER RDX		
Nominal connection diameter		DN 20 (¾")	DN 25 (1")	DN 32 (1¼")
Dimensions and weights				
A Installation height up to centre of connection	[mm]	290		
B Installation length with/without screw connection	[mm]	185/100	182/100	191/100
C Min. distance to wall	[mm]	60		
D Installation depth up to centre of connection	[mm]	160	165	170
E Total height	[mm]	330		
Empty weight	[kg]	2.0	2.2	2.5
Performance data				
Flow rate as per DIN EN 1567	[m³/h]	2.3	3.6	5.8
Pore size	[µm]	100		
Largest/smallest pore size	[µm]	120/80		
Operating pressure	[bar]	2 – 16		
Nominal pressure		PN 16		
General				
Water temperature/ambient	[°C]	5 – 30 / 5 - 40		
DVGW registration number		Test pending		
Order no.		101 525	101 530	101 535

# 10 Operation log

Filter | Backwash filter BOXER \_\_\_\_\_

Serial no.: \_\_\_\_\_



► Document the start-up and all maintenance activities.

## 10.1 Start-up log

Customer		
Name: _____		
Address: _____		
Installation/accessories		
Drain connection acc. to DIN EN 1717:	<input type="checkbox"/> yes	<input type="checkbox"/> no
Floor drain available:	<input type="checkbox"/> yes	<input type="checkbox"/> no
Safety device:	<input type="checkbox"/> yes	<input type="checkbox"/> no
Operating values		
Water pressure raw water inlet:	[bar] _____	
Water pressure downstream of pressure reducer:	[bar] _____	
Residential water meter reading:	[m³] _____	
Start-up		
Company: _____		
Service technician: _____		
Work time certificate (no.): _____		
Date/signature: _____		

## 10.2 Maintenance

[illegible]

Grünbeck Wasseraufbereitung GmbH  
Josef-Grünbeck-Str. 1  
89420 Hoechststadt  
Germany



+49 9074 41-0



+49 9074 41-100

[info@gruenbeck.com](mailto:info@gruenbeck.com)  
[www.gruenbeck.com](http://www.gruenbeck.com)



For more Information go  
to [www.gruenbeck.com](http://www.gruenbeck.com)