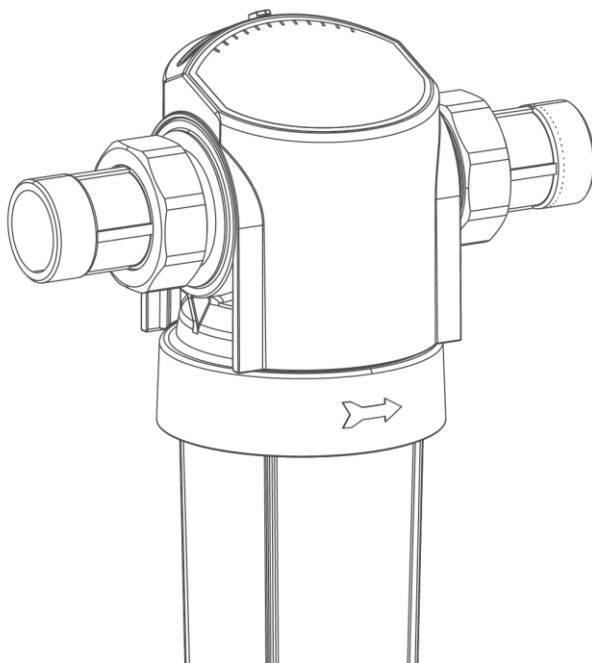


We understand water.



Filter | GENO-fine filter FS-B

Operation manual

grünbeck

**General Contact  
Germany**

**International Sales**  
Phone +49 9074 41-145

**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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**Translation of the original operation manual**

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# 1 About this manual

## 1.1 Other applicable documents

The following documents shall be considered as applicable documents for the GENO-fine filter FS-B as well:

- The manuals of all accessories used shall apply.

## 1.2 Target group

This manual is intended for qualified specialists and owners/users.

## 1.3 Storage of documents

Keep this manual and all other applicable documents, so that they are available when needed.

## 1.4 Symbols used



This symbol identifies instructions that you must comply with for your personal safety.

---



This symbol identifies instructions that you must comply with in order to avoid damage to property.

---



This symbol identifies important information about the product or its handling.

---



This symbol identifies work that may only be carried out by qualified specialists. In Germany, the installation company must be registered in an installation directory of a water supply company acc. to §12(2) AVB Wasser V (German Ordinance on General Conditions for the Supply of Water).

---



This symbol identifies information where entries/written documentation is required.

---

# 1.5   Typographical conventions

The following typographical conventions are used in this manual:

Designation	Header text
Instruction Single-step instruction or chronological sequence of actions does not matter	▶ Action
Instruction Multi-step instruction and chronological sequence of actions is important	1. First action  a first step  b second step  2. Second action
Result following an instruction	» Result
Lists	• Listed item  • Listed sub-item
Menu paths	Status level>Menu level>Submenu
Display texts	Display text
Operating elements	Button/key

# 1.6   Validity of the manual

This manual applies to the following products:

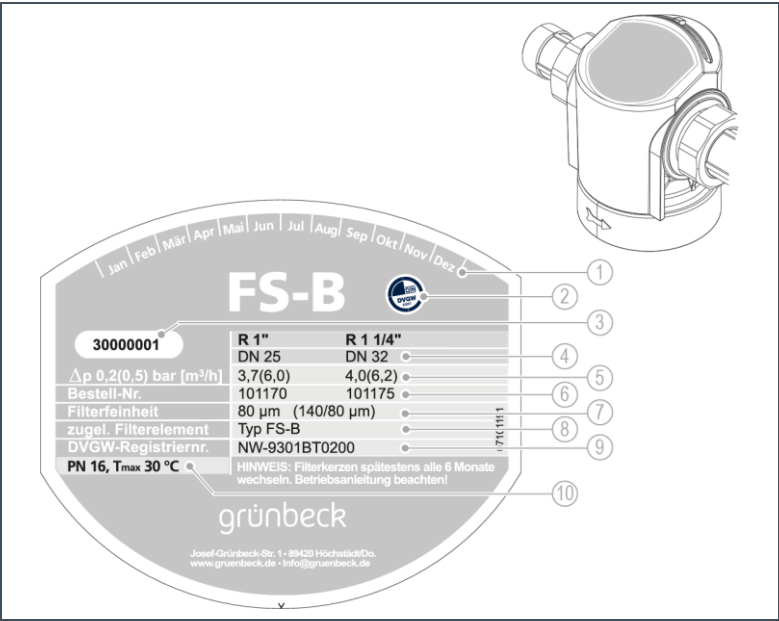
- GENO-fine filter FS-B

# 1.7 Type plate

The type plate is located at the top of the housing.

Please specify the data shown on the type plate in order to speed up the processing of your inquiries or orders.

- Therefore, enter the necessary information in the table below to have it readily available whenever necessary.



Item	Designation	Item	Designation
1	Indication of month	2	DVGW test mark
3	Serial number	4	Connection diameter
5	Flow rate	6	Order no.
7	Pore size	8	Product designation
9	DVGW registration number	10	Nominal pressure, max. water temp.

- Product designation: GENO-fine filter FS-B\_\_\_\_\_
- Order number: 101 \_\_\_\_\_
- Serial number: \_\_\_\_\_

## 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 qualified specialists only.
- 

### 2.1 Safety measures

- Carefully read this manual before operating your product.
- Only operate the product if all components are installed properly.
- Only have persons working on your product that have read and understood the present manual and that are qualified to do such work due to their vocational training.
- Comply with the hygiene instructions in chapter 6. Failure to comply can result in microbiological contamination of your drinking water installation.
- Safety equipment must never be removed, bridged or otherwise tampered with.
- This product can be used by children over 8 years of age and persons with limited abilities or lack of experience if they are supervised or instructed in the safe use of the product and understand the resulting hazards.
- Children are not allowed to play with the product.
- Cleaning and maintenance must not be carried out by children.



## 2.2 Technical safety instructions

This manual contains instructions that you must comply with for your own personal safety as well as to avoid damage to property. The instructions are highlighted by a warning triangle and have the following structure:



**CAUTION:** Type and source of danger

- Possible consequences
  - ▶ Preventive measures
- 

The following signal words were defined subject to the degree of danger and may be used in the present document:

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

## 2.3 Regulations

When installing and starting up the product, amongst others, comply with the following regulations and guidelines:

- Statutory regulations on environmental protection
- Provisions of the employers' liability insurance companies
- DIN EN 806 Specifications for installations inside buildings conveying water for human consumption
- VDI 6023 Part 5 - 7 Specifications for installations inside buildings conveying water for human consumption

## 2.4 Responsibilities of the qualified specialist

Comply with the following instructions to ensure the proper and safe functioning of the product:

- Only perform activities described in this manual.
- Perform all activities in accordance with all applicable standards and regulations.
- Brief the owner/user on the function and operation of the product.
- Advise the owner/user of the maintenance of the product.
- Inform the owner/user about possible dangers that can arise during the operation of the product.
- Fill in the operation log (refer to chapter 10).

## 2.5 Responsibilities of the owner/user

Comply with the following instructions to ensure the proper and safe functioning of the product:

- Arrange for a qualified specialist to carry out installation, start-up and maintenance.
- Have the product explained to you by a qualified specialist.
- Only perform activities described in this manual.
- Do not carry out any activities that are explicitly designated for a qualified specialist.
- Only use this product as intended.
- Make sure that the required inspection and maintenance work is carried out.
- Keep this manual.

## 2.6 Product-specific safety instructions




---

**WARNING:** If the intervals for inspection and replacement are not observed, the filter element will become excessively polluted.

- Health risk due to contamination of the drinking water.
  - ▶ Observe the intervals and recommendations for inspection and replacement of the filter element.
-

## 2.7 Shipping and storage

### Transport

- ▶ Transport the product in its original packaging.

### Storage

- ▶ Protect the product from the following:
  - Damp, moisture, environmental impacts such as wind, rain, snow, etc.
  - Frost, direct sunlight, severe heat exposure
  - Chemicals, dyes, solvents and their vapours

## 3 Product description

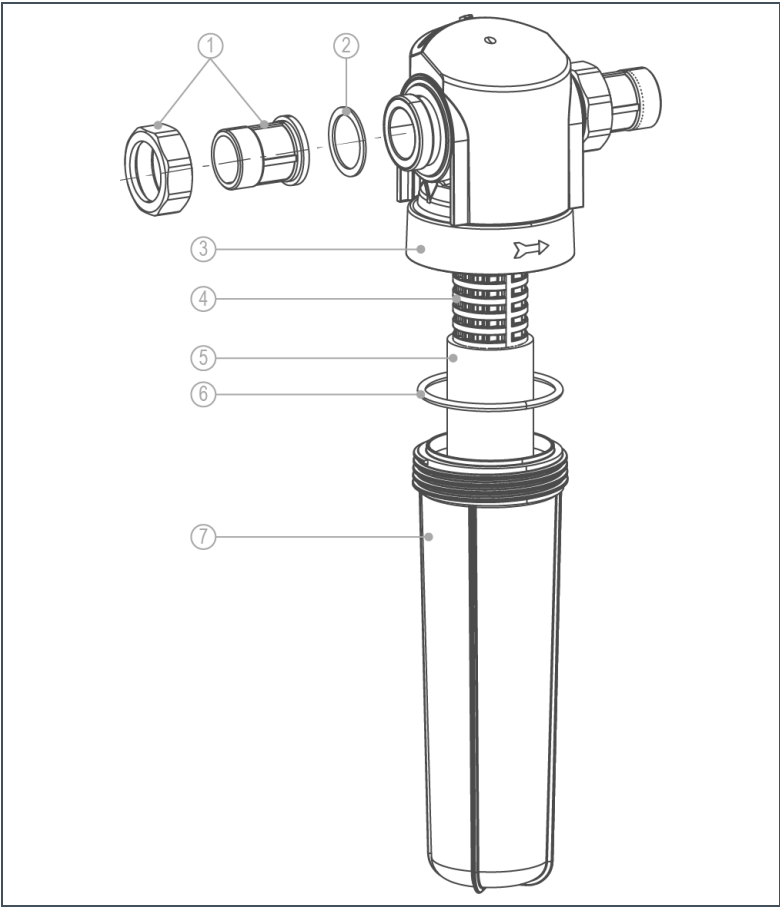
### 3.1 Intended use

- The GENO-fine filters FS-B are designed for the filtration of drinking water.
- The filters can be used for positive and negative pressure applications.
- The filters are designed according to the stipulations of DIN EN 13443-1 and DIN 19628 and are intended for installation into drinking water system according to DIN EN 806-2 (installation immediately downstream of the water meter).
- The filters protect the water pipes and connected water-carrying system parts from malfunctions and corrosion damage due to undissolved impurities (particles), such as rust particles, sand, etc.

### 3.2 Foreseeable misuse

- The filters are not suitable for circulation water that has been treated with chemicals.
- The filters 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	Flat seal
3	Filter housing	4	Support mesh
5	Filter element	6	O-ring
7	Filter cylinder		

## 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 a size  $> 80 \mu\text{m}$  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.

In order to indicate the operating pressure, a pressure gauge with brass insert can additionally be installed on the inlet or outlet side.

### 3.5 Accessories



You can retrofit your product with additional accessories. Please contact your local Grünbeck representative or Grünbeck's headquarters in Hoechst/ Germany for details.

Product	Order no.	
	1" - 1¼"	1½" - 2"
<b>DVGW-certified</b>		
80 µm filter element (2 pieces)	103 075	103 077
<b>Not tested according to DVGW (German Association of the Gas and Water Industry)</b>		
50 µm filter element (2 pieces)	103 068	103 070
20 µm filter element (2 pieces)	103 071	-
5 µm filter element (2 pieces)	103 081	103 083

Illustration	Product	Order no.
	Black filter cylinder	
	1" - 1¼"	101 266e
	1½" - 2"	101 167e
	Black filter cylinder (incl. 2 O-rings) instead of transparent filter cylinder. To protect the filter from algae growth and UV radiation.	
	Pressure gauge	
	1"	100 860
	1¼"	100 865
	1½"	100 870
	2"	100 875
	Pressure gauge with insert, union nut and flat seal. To indicate the operating pressure on the inlet or outlet side.	
	Insert with non-return valve	
	1"	101 644e
	Insert with non-return valve and flat seal for the filter's outlet side. To prevent the water from flowing back into the drinking water supply line.	



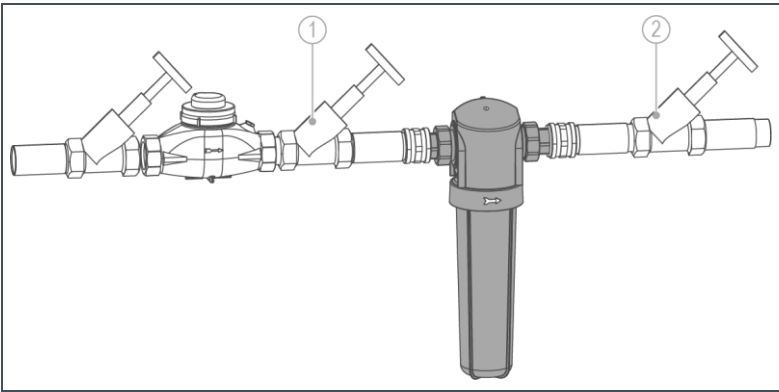
# 4 Installation



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

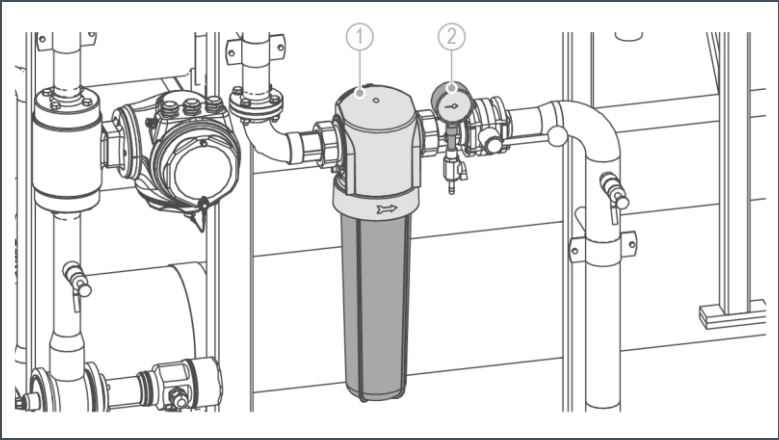
## Installation into the drinking water system

In accordance with DIN EN 806-2 and DIN EN 1717, the product is installed in the cold-water pipe downstream of the water meter and upstream of distribution pipes or the systems to be protected.



Item	Designation	Item	Designation
1	Shut-off valve (inlet)	2	Shut-off valve (outlet)

Installation into systems (e.g. Osmosis)



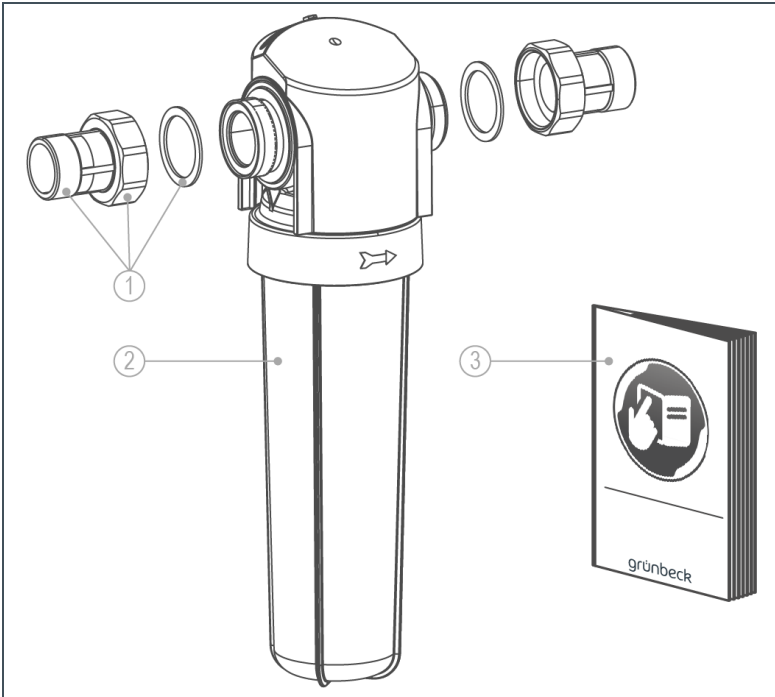
Item	Designation	Item	Designation
1	Filter with black filter cylinder	2	Pressure gauge

4.2 Requirements with regard to the installation site

Observe local installation directives, general guidelines and technical specifications.

- The installation site must be frost-proof and ensure the filter's protection from chemicals, dyes, direct sunlight, solvents and their vapours.
- The installation room must provide a floor drain. If no floor drain is available, an appropriate safety device must be installed in order to prevent water damage. We recommend using a protectliQ:A.
- The installation site must be easily accessible for maintenance purposes.

## 4.3 Checking the scope of supply



Item	Designation	Item	Designation
1	Water meter screw connection, flat seal, union nut	2	GENO-fine filter FS-B
3	Operation manual		

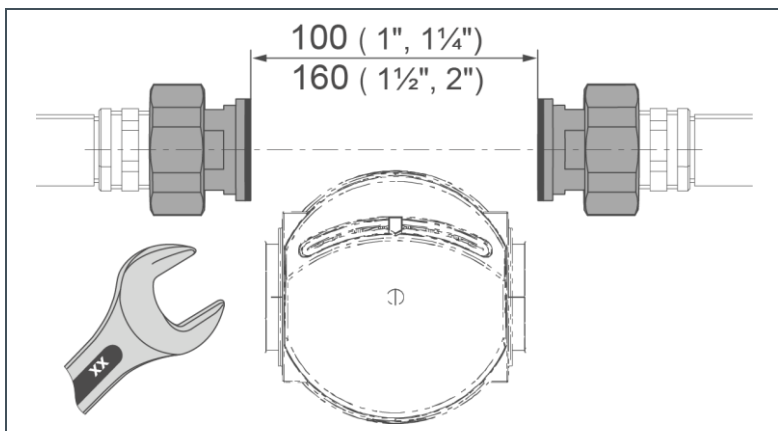
- Check the scope of supply for completeness and damage.

## 4.4 Installing the product

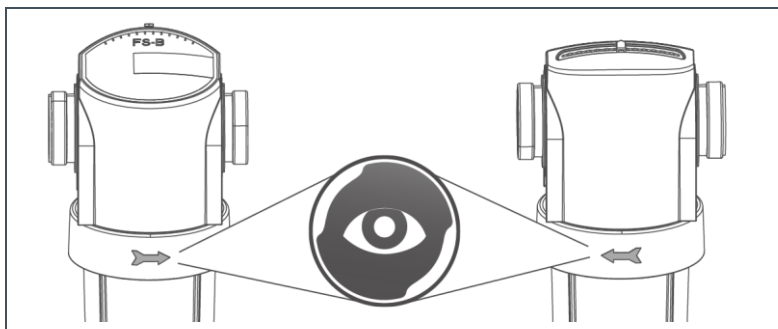


The filter may only be installed in horizontal pipes.

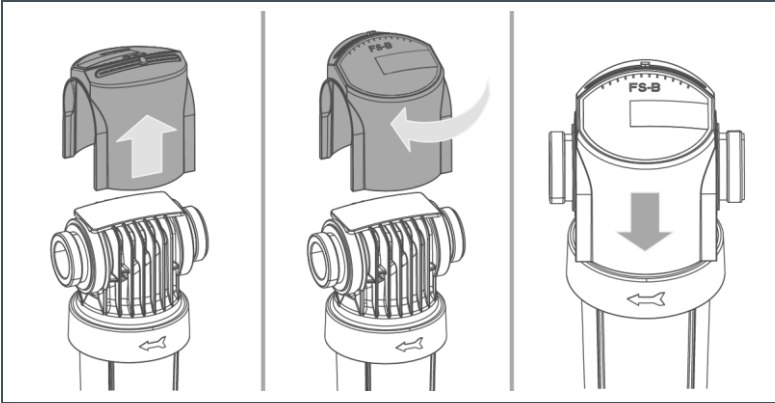
- Check the flow direction given on site.



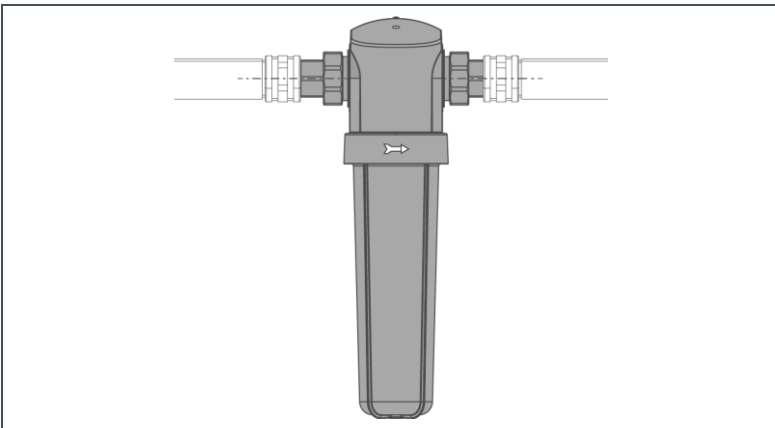
1. Install the water meter screw connections into the pipe (the installation dimension must be: 100 mm = for 1", 1 1/4" and 160 mm = for 1 1/2", 2").



2. Check the marking indicating the flow direction on the filter - the arrow must correspond to the flow direction of the water.



3. Reposition the cover according to the direction of flow - with the type plate facing towards the front.
4. Position the filter.
5. Tighten the filter with the water meter screw connections using an open-ended wrench without applying mechanical stress.



» The filter is installed.

## 5 Start-up

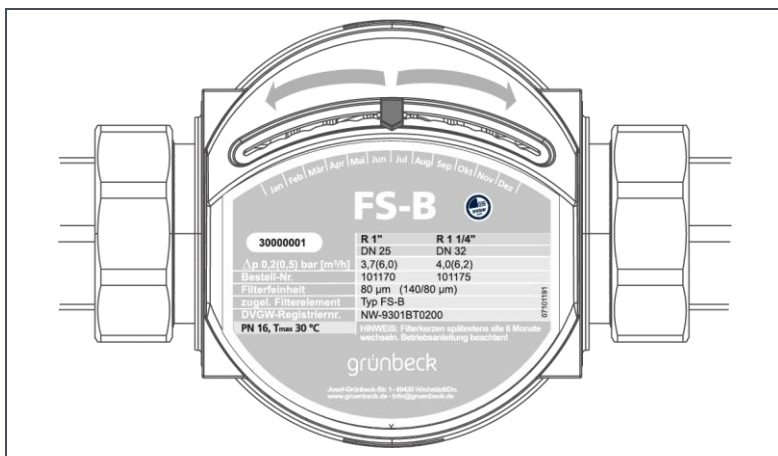
### 5.1 Starting up the product

1. Open the shut-off valves.
2. Open the closest water withdrawal point downstream of the filter to the maximum.
  - » The filter is vented.
3. Check the filter for leaks.
  - » The filter is in operation.

#### 5.1.1 Setting the month indication



On the upper side of the filter housing, a maintenance indicator is located.



- Set the maintenance indicator to the desired month.

## 5.2 Handing over the product to the owner/user

- ▶ 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.
- ▶ Hand over all documents to the owner/user for keeping.
- ▶ Enter the initial start-up in the operation log (refer to chapter 10.1).

## 6 Cleaning, inspection, maintenance



---

**WARNING:** Danger 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 by the DIN EN 806-5 standard. Regular maintenance ensures trouble-free and hygienic operation.



---

By concluding a maintenance contract, you ensure that all maintenance work is carried out on time.

---

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

### 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 product with alcohol or cleaning agents containing solvents.

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

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

## 6.2 Intervals

Task	Interval	Execution
Inspection	2 months	Visual/functional check
Maintenance	6 months	Replace the filter element, adjust the maintenance indicator, clean the support mesh
	Annually	Check O-rings/flat seals for wear and tear, check tight fit, replace filter element
Maintenance	5 years	Recommendation: replace support mesh, flat seals
	10 years	Recommendation: in addition to 5-year interval – replace filter cylinder

## 6.3 Inspection

According to DIN EN 806-5, the owner/user must inspect the filters every 2 months.

To conduct an inspection, proceed as follows:

1. Check the installation for leaks and function.
2. Check the filter element for impurities.
3. In case of impurities, replace the filter element.

**In case of pressure gauges installed for upstream and downstream pressure:**

- ▶ Read off the inlet and outlet pressure at the pressure gauges.
- ▶ In case of a differential pressure of  $> 0.5$  bar, replace the filter element.

## 6.4 Maintenance



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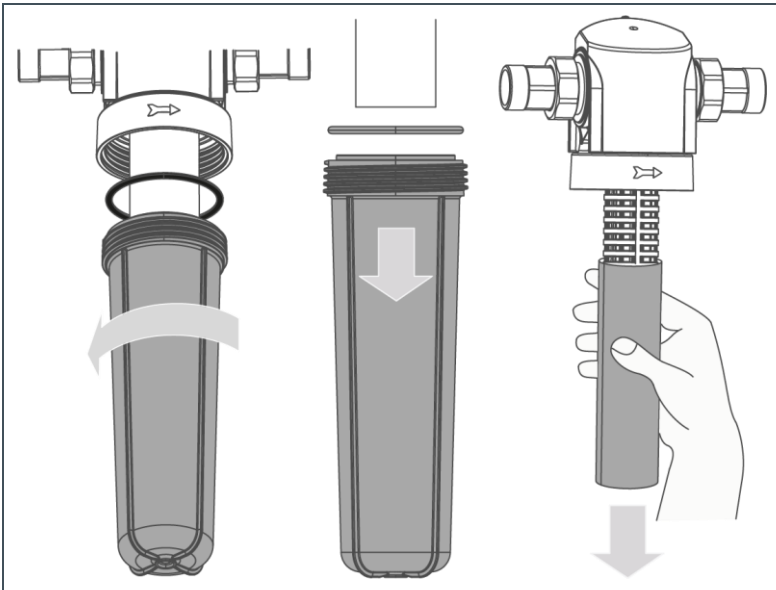
**WARNING:** Filter element not replaced at regular intervals.  
Support mesh not cleaned.

- Health risk due to contamination of the drinking water.
  - ▶ Observe the intervals for inspection and replacement of the filter element (according to DIN EN 806-5 every 6 months at the latest).
  - ▶ Discard a used filter element.
- 

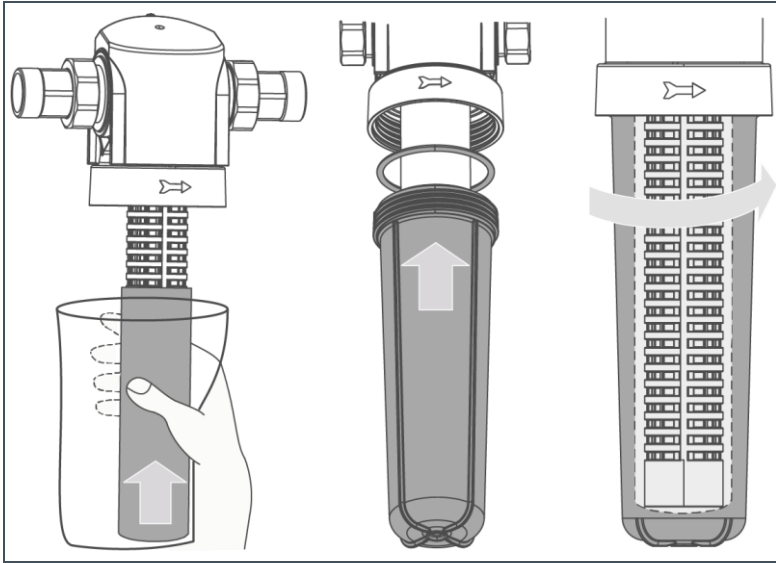
### 6.4.1 Replacing the filter element hygienically

1. Place a bucket under the filter.
2. Close shut-off valve 1 (inlet).
3. Depressurise the pipe.

4. Close shut-off valve 2 (outlet).



5. Unscrew the filter cylinder by hand.
6. Pull off the O-ring with the filter cylinder.
7. Pull the used filter element off the support mesh.
  - If necessary, clean the support mesh - in case of major impurities.
8. Dispose of the used filter element in accordance with local regulations.



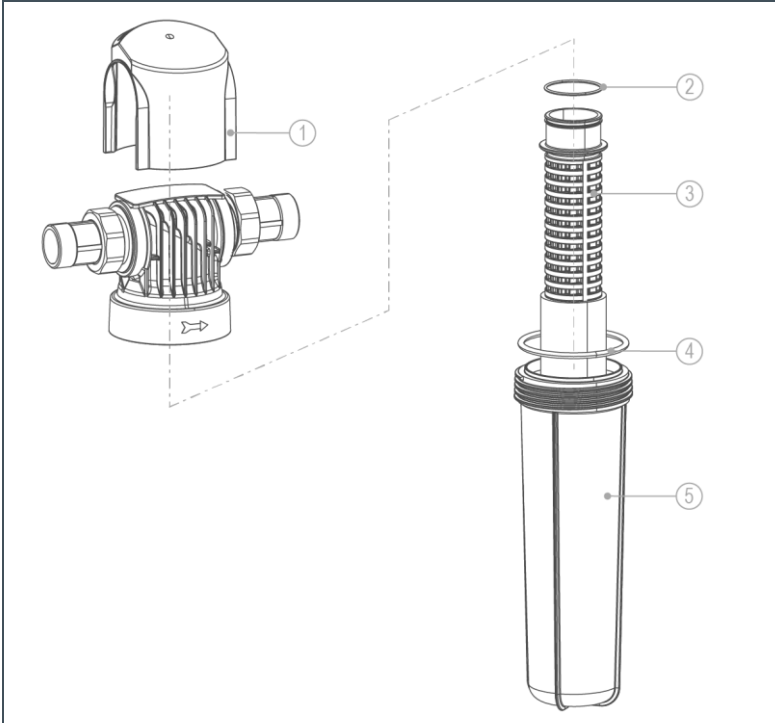
For hygienic reasons, do not touch the new filter element with bare hands.

---

9. Slide the new filter element in its foil packaging over the support mesh.
10. Check the sealing surfaces and the O-ring for cleanliness.
11. Insert the O-ring and screw in the filter cylinder by hand as far as the stop.
  - » The filter element is replaced.
12. Put the filter into operation – refer to chapter 5.
  - » The filter is ready to use.

## 6.4.2 Wearing/spare parts

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



Item	Designation	Item	Designation
1	Cover	2	Support mesh O-ring
3	Support mesh	4	Cylinder O-ring
5	Filter cylinder		
Tools required		Order no.	
Strap wrench (to dismount the filter cylinder)		105 805	

- Have defective/worn components replaced.

# 7 Troubleshooting



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

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

- If you cannot remedy malfunctions with the instructions given below, contact Grünbeck's technical service/ authorised service company.
- Have your system data (refer to chapter 1.7) handy.

Malfunction	Explanation/Cause of error	Troubleshooting
Water pressure at the withdrawal point too low (pressure loss too high).	The shut-off valves are not fully open.	Fully open the shut-off valves.
	The filter element is dirty.	Change the filter element.
Taste of the treated water negatively affected.	Inappropriately long period of non-use (standstill).	Withdraw water for a few minutes. Replace the filter element.
	Inappropriately high flow through the filter.	Check the support mesh and the filter element for damage or leaks.
Solids contained in the filtered water.	Filter element/support mesh damaged or not installed properly.	Check the installation of the filter element/the filter mesh and if necessary, replace them for new filter element/ support mesh/flat seals.
		Check the O-ring and the flat seals for deformation or wear and tear.
Water loss in the system.	Faulty joint.	Check the filter housing for damage.
		Have the filter housing replaced by a qualified specialist.

## 8 Disposal

- Comply with the applicable national regulations.

### 8.1 Packaging

- Dispose of the packaging in an environmentally sound manner.

### 8.2 Product



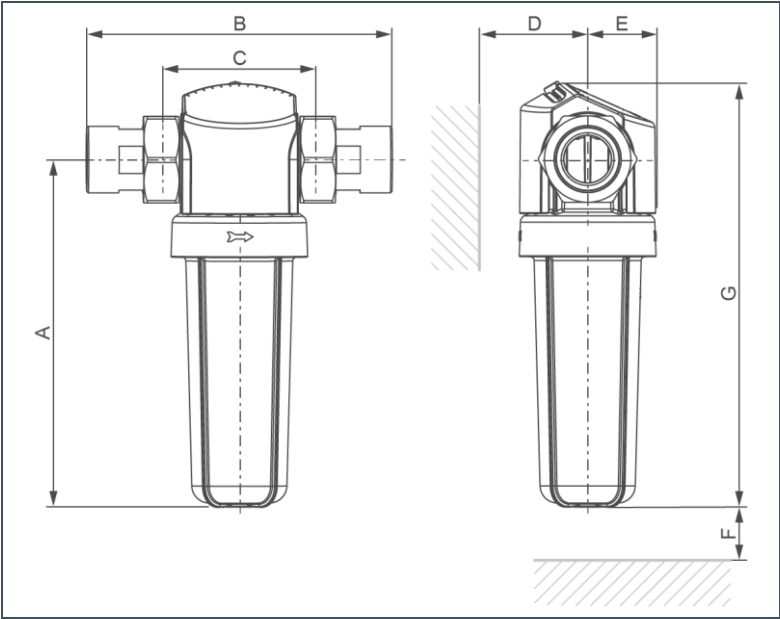
If this symbol (crossed out waste bin) is on the product, this product is subject to the European Directive 2012/19/EU. This means that this product and the electrical and electronic components must not be disposed of as household waste.

- Find out about the local regulations on the separate collection of electrical and electronic products.
- Make use of the collection points available to you for the disposal of your product.



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

# 9 Technical specifications

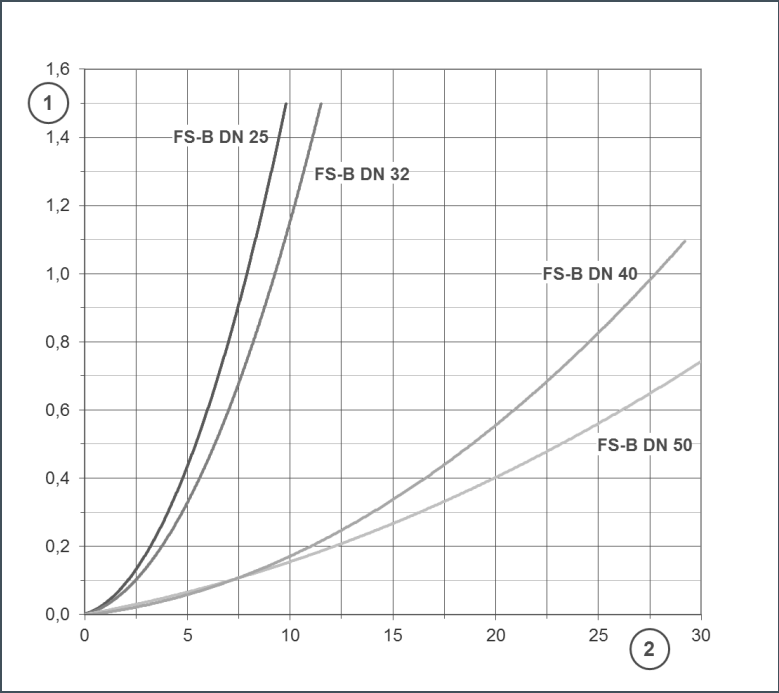


Dimensions and weights			GENO-fine filter FS-B			
Nominal connection diameter			DN 25	DN 32	DN 40	DN 50
Connection diameter			1"	1¼"	1½"	2"
A	Installation height up to centre of connection	[mm]	220		430	
B	Installation length with screw connection	[mm]	182	191	283	277
C	Installation length without screw connection	[mm]	100		160	
D	Min. distance to wall	[mm]	70		90	
E	Installation depth up to centre of connection	[mm]	45		65	
F	Clearance required to replace the filter element	[mm]	> 150		> 390	
G	Total height	[mm]	265		508	
	Empty weight	[kg]	1.2	1.4	3.7	4.4



Performance data		1"	1¼"	1½"	2"
Nominal flow at Δp 0.2 (0.5) bar	[m³/h]	3.7 (6.0)	4.0 (6.2)	11.1 (19.9)	13.9 (23.3)
Pore size	[µm]	80			
Largest/smallest pore size	[µm]	140/80			
Operating pressure	[bar]	2 - 16			
Nominal pressure		PN 16			
General data					
Water temperature	[°C]	5 - 30			
Ambient temperature	[°C]	5 - 40			
DVGW registration number		NW-9301BT0200			
Order no.		101 170	101 175	101 180	101 185
Order no.				101 190.	101 200.
Version: Osmosis with black filter cylinder, 5 µm filter element					

Pressure loss curves of GENO-fine filter FS-B



Item	Designation	Item	Designation
1	Pressure difference [bar]	2	Flow rate [m³/h]

# 10 Operation log

Filter | GENO-fine filter FS-B \_\_\_\_\_

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



► Document the start-up and all maintenance activities.

## 10.1 Start-up log

Customer	
Name:	_____
Address:	_____
Installation/Accessories	
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 at raw water inlet:	_____ [bar]
Residential water meter reading:	_____ [m³]
Remarks	
_____	
_____	
_____	
_____	
Start-up	
Company:	_____
Service technician:	_____
Work time certificate (no.):	_____
Date/signature:	_____

## 10.2 Maintenance

[illegible]

## 10.3 Maintenance

[illegible]

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Grünbeck Wasseraufbereitung GmbH  
Josef-Grünbeck-Str. 1  
89420 Hoechstädt  
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)