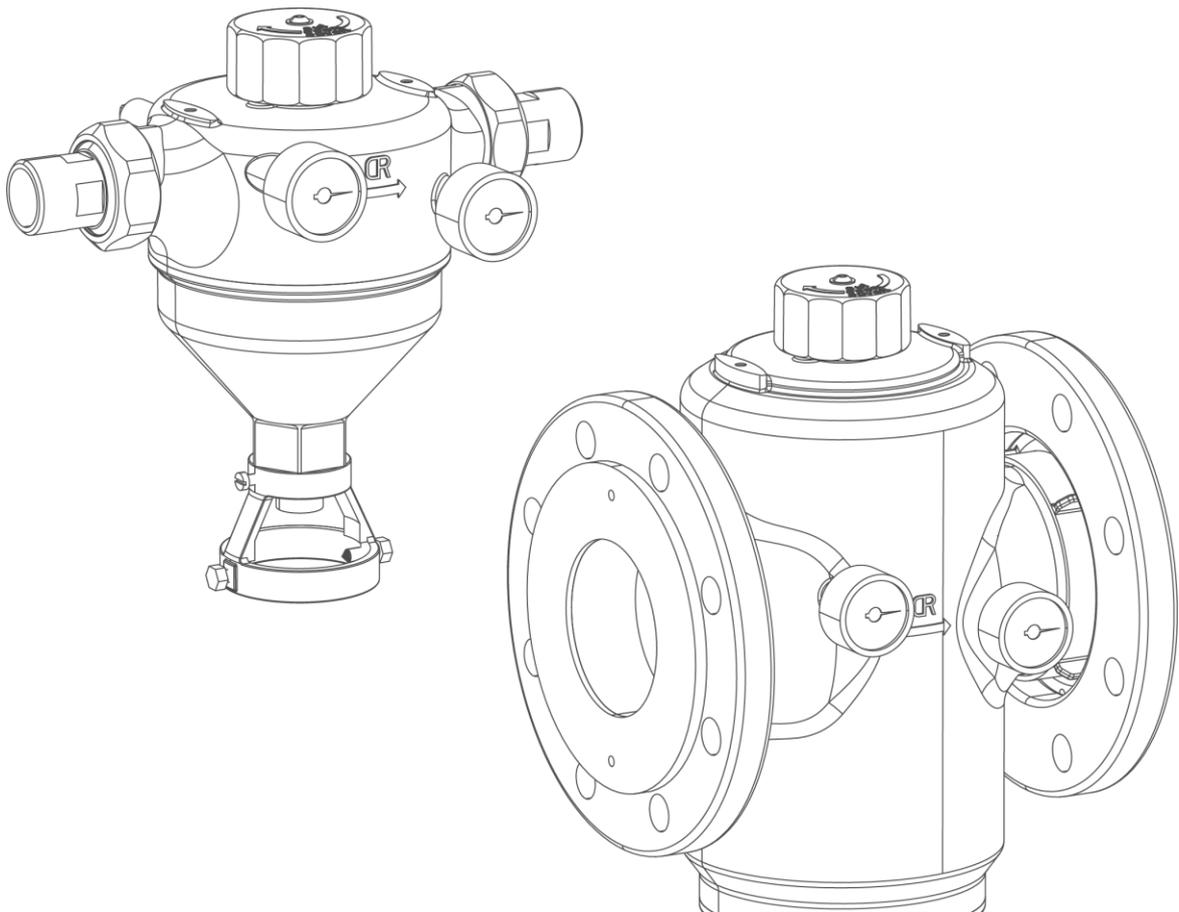


We understand water.



Filter | GENO backwash filter MX 1" - MX DN 100

Operation manual

grünbeck

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Availability

Monday to Thursday
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7:00 am – 4:00 pm

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Subject to technical modifications.

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Original operation manual

Edition: January 2022

Order no.: TD3_AM000en_044

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1 About this instruction

1.1 Other applicable documents

The following documents shall be considered as applicable documents for the GENO backwash filter as well:

- For Grünbeck's technical service/authorised service company:
Technical service manual GENO backwash filter MX
Order no.: TD4_AM000
- The manuals of all accessories used shall apply.

1.2 Target group

This manual is intended for specialist installers and owners/users.

1.3 Storage of documents

Keep this manual and all other applicable documents, so that they are available when needed. Make sure that your specialist installer enters the proper start-up and annual maintenance in the operation log in chapter 10.

1.4 Symbols used



This symbol identifies instructions that you must comply with for your personal safety as well as to avoid damage to property.



This symbol identifies information and 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 is only allowed to be carried out by a specialist installer. 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).

1.5 Typographical conventions

The following typographical conventions are used in this instruction:

Description	Depiction
Handling instruction One-step or chronological sequence of steps does not matter	▶ Action
Handling instruction multi-step and chronological sequence of action steps important	First action first step second step Second action
Result after a handling instruction	Result
Lists	List item List sub-item
Menu paths	Status level>Menu level>Submenu
Display texts	Display text
Operating elements	Button/key

1.6 Validity of the instruction

This instruction applies to the following products:

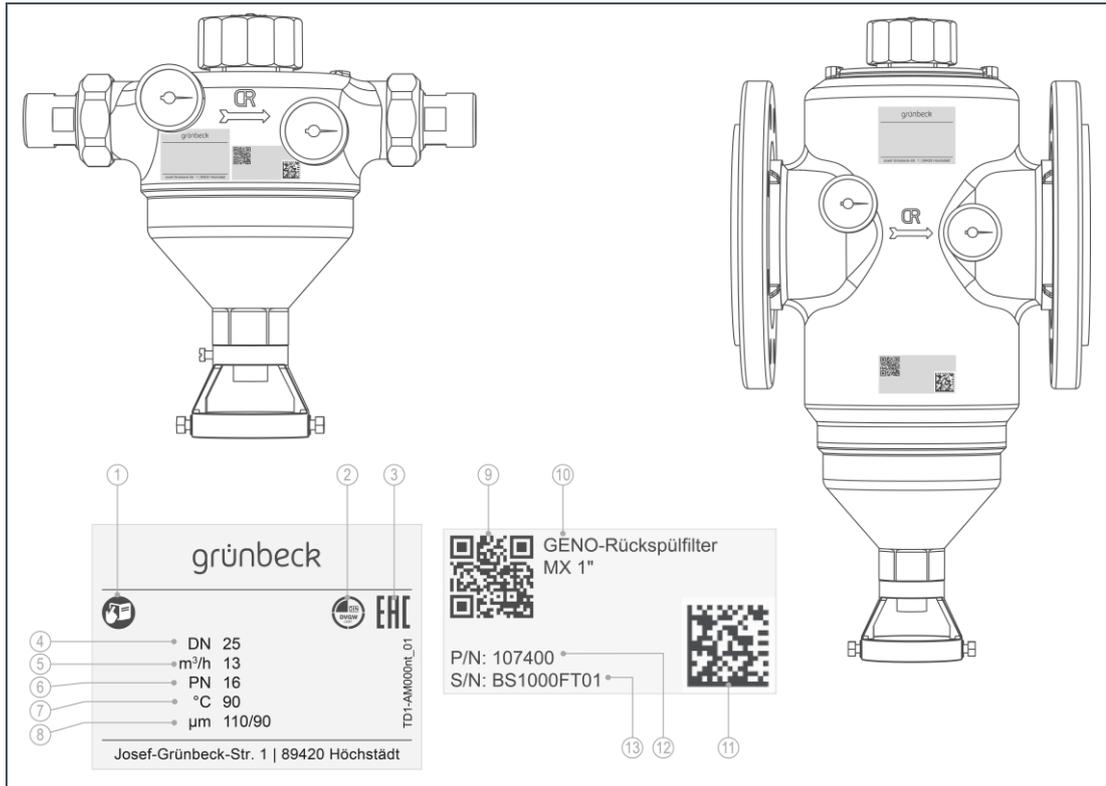
- GENO backwash filter MX 1" (DN 25)
- GENO backwash filter MX 1¼" (DN 32)
- GENO backwash filter MX 1½" (DN 40)
- GENO backwash filter MX 2" (DN 50)
- GENO backwash filter MX DN 65
- GENO backwash filter MX DN 80
- GENO backwash filter MX DN 100

1.7 Type plate

The type plate is located on the front of the filter housing.

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

- Therefore, add the serial number below in order to have the necessary data available at all times.



Item	Designation	Item	Designation
1	Observe operation manual	2	DVGW test mark
3	EAC mark	4	Nominal connection diameter
5	Nominal flow	6	Nominal pressure
7	Max. water temperature	8	Max./min. pore size
9	QR code	10	Product designation
11	Data matrix code	12	Order no.
13	Serial no.		

- Product designation: GÉNO backwash filter MX _____
- Order number: 107 _____
- Serial no.: _____

2 Safety



WARNING: Contamination of drinking water due to incorrect handling.

- Risk of infectious diseases.
- ▶ Have the installation, commissioning and annual maintenance carried out exclusively by specialist installers.

2.1 Safety measures

- Carefully read this manual before operating your product.
- Install the product in a frost-free room. Otherwise, the system may suffer irreparable damage. The consequence may be water damage.
- Only use genuine spare parts for maintenance or repair. If unsuitable spare parts are used, the warranty for your product will be void.
- Keep your product permanently connected to the power and water supply.
- Comply with the hygiene instructions in chapter 6. Failure to comply can result in microbiological contamination of your drinking water installation.
- Only have persons working on your product who have read and understood this manual and that are qualified to do such work on account of their vocational training.
- Only operate the product if all components are installed properly.
- Safety devices must never be removed, bridged or otherwise tampered with.
- Observe the maintenance intervals (refer to chapter 6.2). Failure to comply can result in microbiological contamination of your drinking water installation.
- 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 do understand the resulting hazards.
- Cleaning and maintenance must not be carried out by children.
- Keep the product away from children.

2.2 Technical safety instructions

This manual contains instructions that you must comply with for your 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 are defined depending on the degree of danger, and can be used in this document:

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

2.3 Regulations

Comply with the following regulations and directives, amongst others, during installation and start-up:

- 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 Duties of the specialist installer and/or the specialist company

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.
- Instruct the owner-user about possible dangers that can arise during operation of the product.
- Fill in the operation log (refer to chapter 10).

2.5 Duties of the owner/user

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

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

2.6 Product-specific safety instructions



WARNING: If the intervals for inspection and backwashing are not observed, the filter element will become excessively dirty.

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

2.7 Packaging, shipping and storage

Transport

- ▶ Transport the filters only in their original packaging.

Storage

- ▶ Store the product in a protected place:
 - Damp, moisture, environmental influences such as wind, rain, snow, etc.
 - Frost, direct sunlight, strong heat exposure
 - Chemicals, dyes, solvents and their vapours

3 Product description

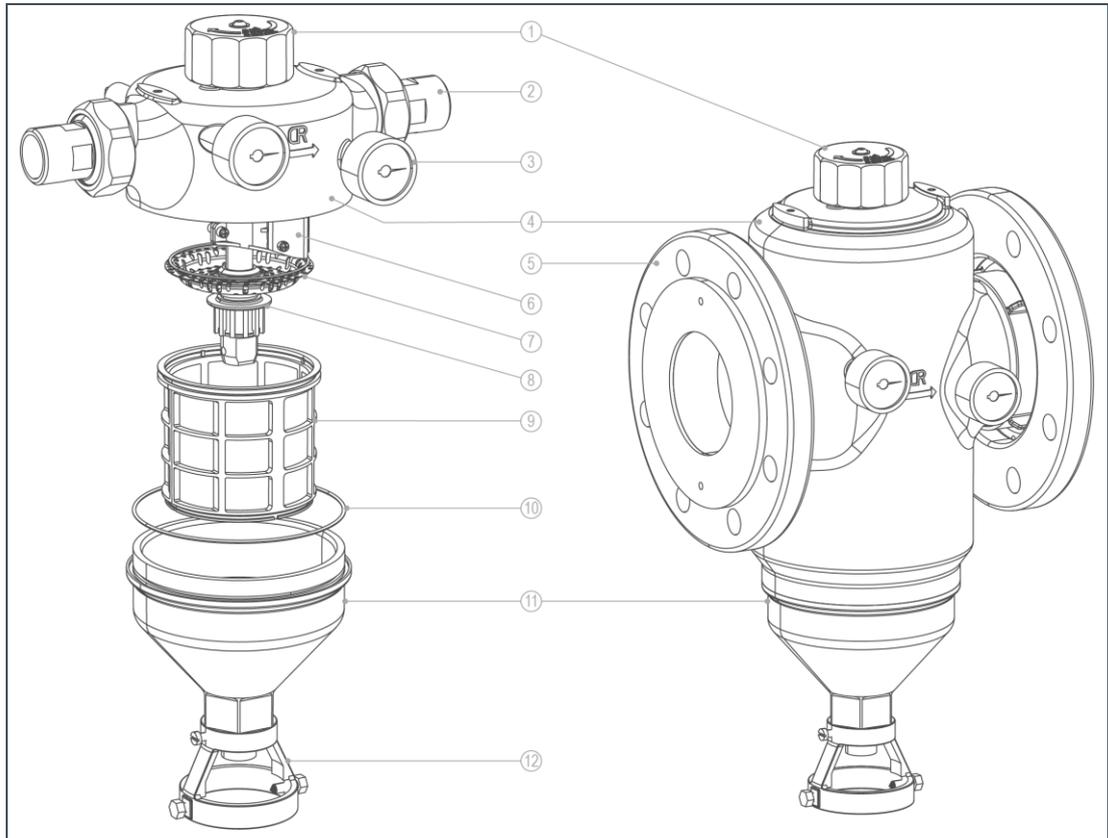
3.1 Intended use

- GENO-backwash filters MX are designed for the filtration of drinking and process water.
- The filters are suitable for filtration of process, boiler feed, cooling and air conditioning water – only in partial flow.
- The filters are suitable for water temperatures up to 90 °C.
- The filters can be used in the pressure range.
- The filters are designed according to the stipulations of DIN EN 13443-1 and DIN 19628 and are intended for installation into drinking water pipes 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 disturbances and corrosion damage due to undissolved impurities (particles), such as rust particles, sand, etc.

3.2 Foreseeable misuse

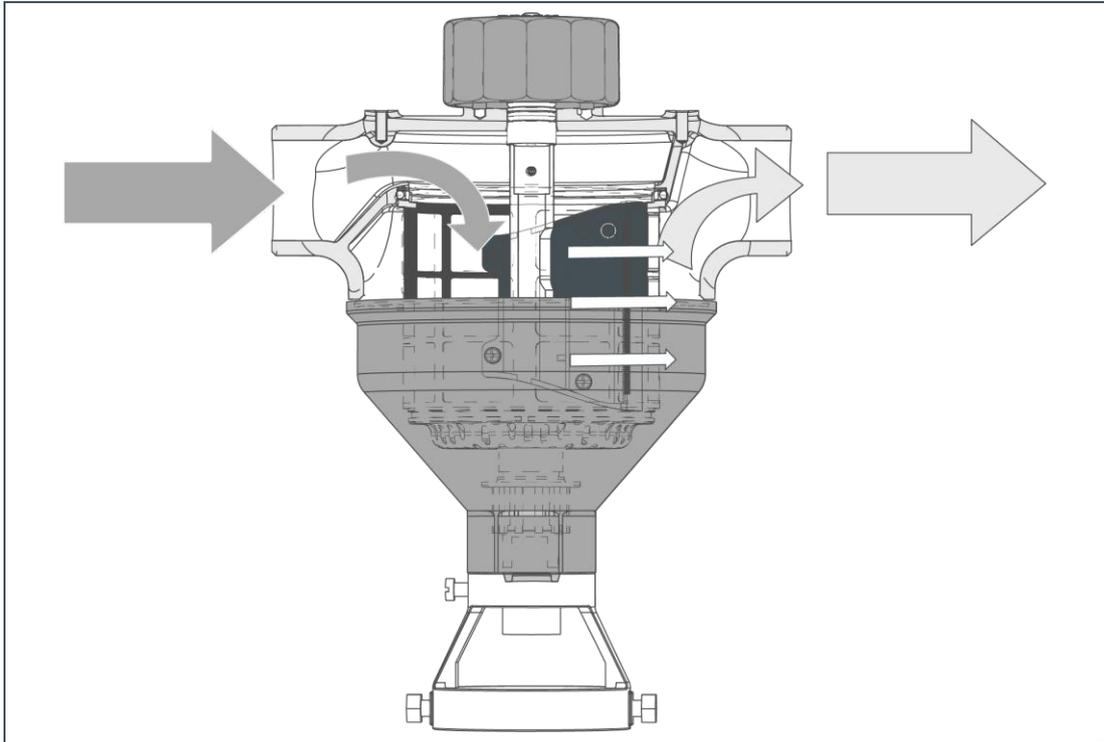
- The filters cannot be used in the negative pressure range.
- The filters are not suitable for circulation water that is treated with chemicals.
- The filters are neither suitable for oils, greases, solvents, soaps and other lubricating media, nor for the separation of water-soluble substances.
- Do not install the filters in vertical water pipes.

3.3 Product components



Item	Designation	Item	Designation
1	Backwash handwheel	2	Water meter screw connection
3	Pressure gauge	4	Filter housing
5	Flange connection	6	Brush
7	Sieve bottom	8	Suction nozzle
9	Filter element	10	Seal
11	Filter funnel	12	Flushing water connection

3.4 Functional description



The unfiltered raw water flows into the filter from the inlet side and then from the inside out through the filter element and to the pure water outlet.

Thus, foreign particles of $> 100 \mu\text{m}$ in size are retained.

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

If the permissible differential pressure of 0.4 bar is exceeded, backwashing must be carried out. The differential pressure can be read off the pressure gauges.

The drain is opened by turning the backwash handwheel to the right as far as it will go, and backwashing is carried out.

When the backwash handwheel is turned, the brush rotates with the backwash handwheel and sweeps over the filter surface of the filter element. The filter element is cleaned.

The impurities are removed by the brush and the suction nozzle sucks them into the drain outlet.

The drain outlet is closed by turning the backwash handwheel to the left as far as it will go, and the backwashing process is terminated.

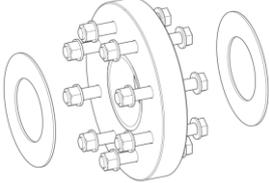
3.5 Accessories



You can retrofit your product with additional accessories. Please contact your local Grünbeck representative or Grünbeck's headquarters in Hoechstädt for details (www.gruenbeck.com).

According to DIN EN 13443 1, filter elements with 50 µm, 200 µm and 500 µm are not admissible for drinking water installations.

Designation	Order no.		
	1" / 1¼"	1½" / 2" / DN 65	DN 80 / DN 100
50 µm filter element	107 052	107 053	107 054
200 µm filter element	107 072	107 073	107 074
500 µm filter element	107 082	107 083	107 084

Image	Product	Order no.
	Drain connection DN 50 acc. to DIN EN 1717, with integrated siphon to discharge the backwash water to the drain.	188 875
	<p>Adapter kit</p> <p>As spacer flange to secure the function of the shut-off valves mounted directly at the filter.</p> <p>Included in the scope of supply: 2 flanges, 4 seals, 16 screws M16x120 mm with discs and nuts</p>	<p>For MX DN 80 with flange connection 106 804e</p> <p>For MX DN 100 with flange connection 106 805e</p>

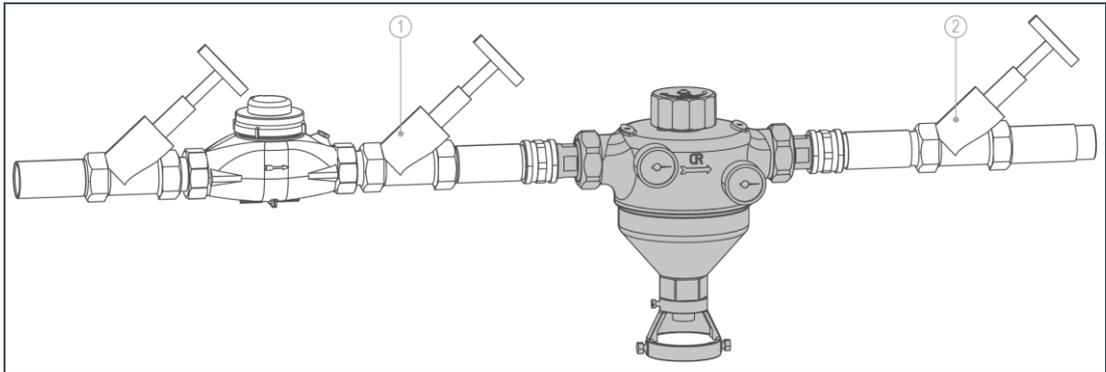
4 Installation



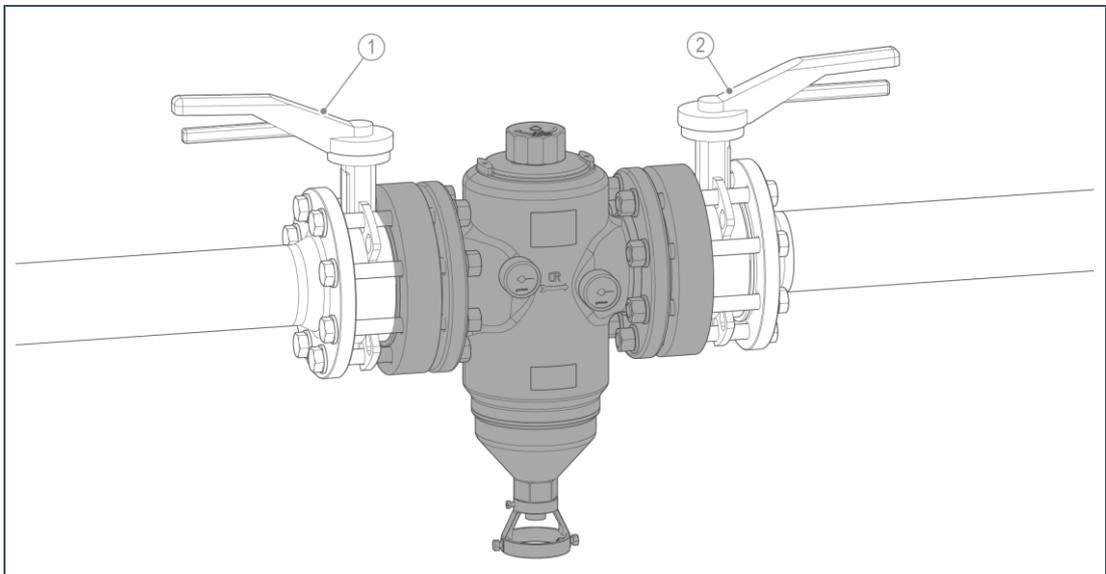
The installation of a filter represents a major intervention into the drinking water system and may only be performed by a specialist installer.

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

GENO backwash filter MX with screw connections



GENO backwash filter MX with flange connections



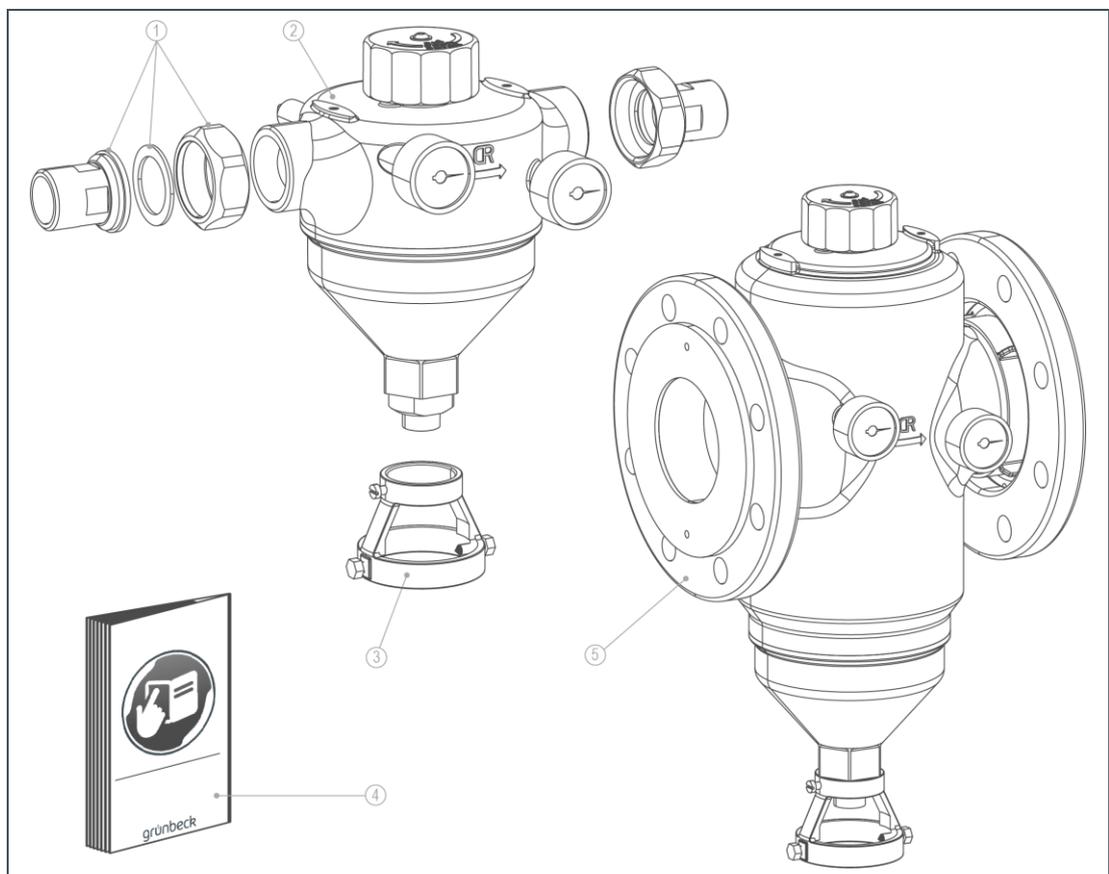
Item	Designation	Item	Designation
1	Inlet shut-off valve	2	Outlet shut-off valve

4.1 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, solvents and their vapours as well as direct sunlight.
- A drain connection (DN 50) must be available to discharge the flushing water.
- The installation room must be provided with a floor drain. If none is available, an appropriate safety device has to be installed to avoid water damage. We recommend using a protectliQ:A.
- The installation site must be well accessible for maintenance purposes.

4.2 Checking the scope of supply



Item	Designation	Item	Designation
1	Water meter screw connection with seal, union nut	2	Filter with screw connections
3	Flushing water connection	4	Operation manual
5	Filter with flange connections		



The filter is supplied with screw connections for sizes: 1" (DN 25), 1¼" (DN 32), 1½" (DN 40), 2" (DN 50)

The filter is supplied with flange connections for sizes: DN 65, DN 80, DN 100

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

4.3 Install the product

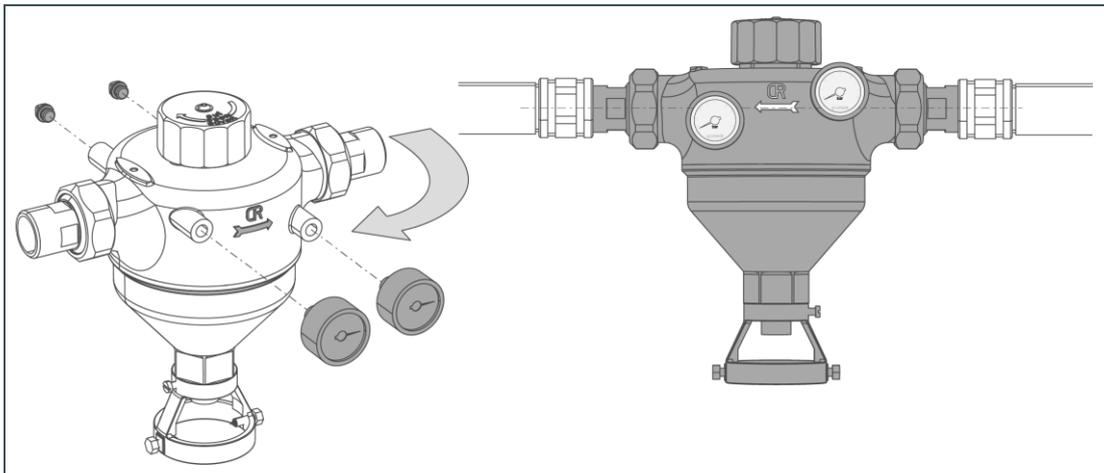


The GENO backwash filter MX is only allowed to be installed horizontally and without stresses.

Please note the following points before installation:

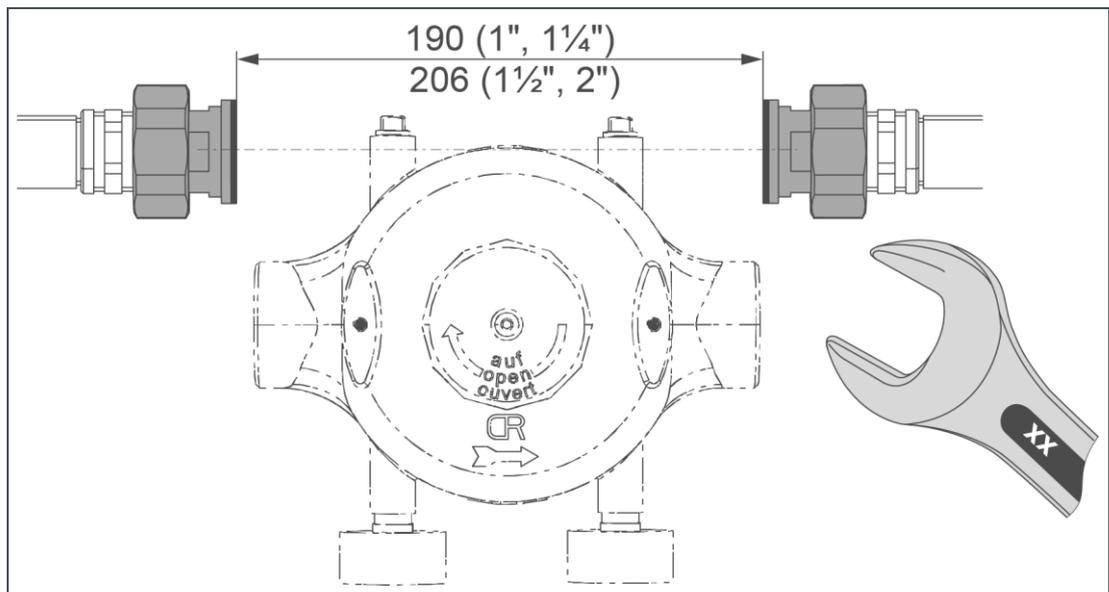
- Installation only possible in horizontal position
- Free outlet and discharge of the backwash water without back-pressure

4.3.1 Changing flow direction

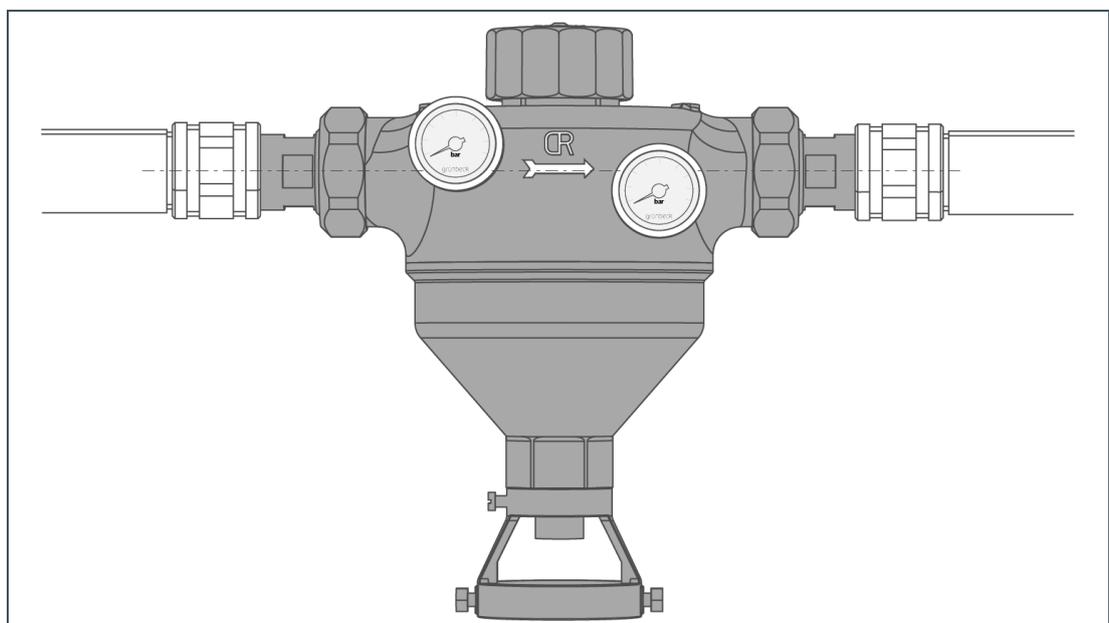


- ▶ Check the flow direction given on site.
- ▶ If necessary, remount the filter as follows:
 1. Unscrew the closing plugs with O-ring and the pressure gauges.
 2. Rotate the filter 180°.
 3. Fit the closing plugs with O-ring and the pressure gauges.
- » The filter has been modified for the flow direction to the left.

4.3.2 Installing GENO backwash filter MX with screw connections

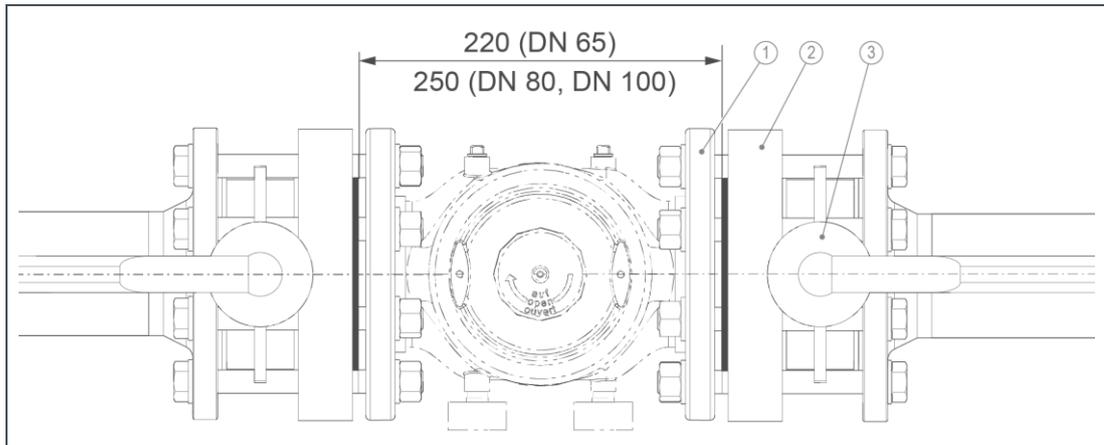


1. Install the pipe fitting into the pipeline (the installation dimension must be for sizes: 1", 1¼", = 190 mm and for size: 1½", 2" = 206 mm).
2. Position the filter (note the flow direction marking on the filter).
3. Tighten the filter using a combination wrench at the pipe screw fittings without applying tension.



» The filter is mounted.

4.3.3 Installing GENO backwash filter MX with flange connection



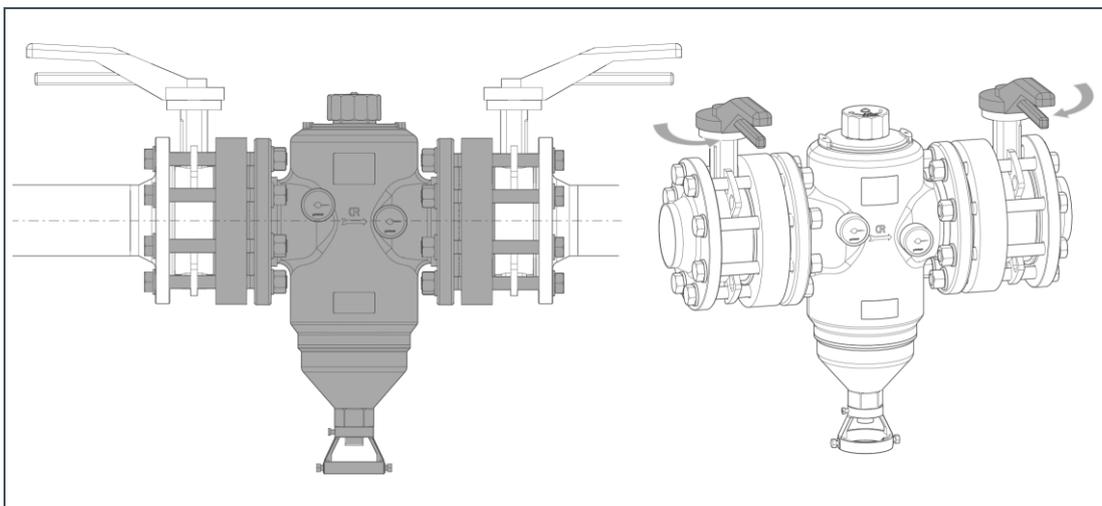
Pos.	Designation	Pos.	Designation
1	Loose flange	2	Adapter kit (for DN 80, DN 100 optional, refer to chapter Accessories Fehler! Verweisquelle konnte nicht gefunden werden.)
3	Shut-off valve		

1. Prepare the pipeline with flange connection in accordance with DIN EN 1092-1 (the distance between the two seals must be: 220 mm for DN 65 and 250 for DN 80 and DN 100).
2. Position the filter (note the flow direction marking on the filter).
3. Tighten the filter at the flange screw connections without applying tension.
 - a If required install an adapter kit (optional), in order to ensure the function of the shut-off valves.



The shut-off valves provided by the client on site must be able to open and close completely.

- ▶ Check the function of the shut-off valves after installation.



4.3.4 Installing the flushing water connection



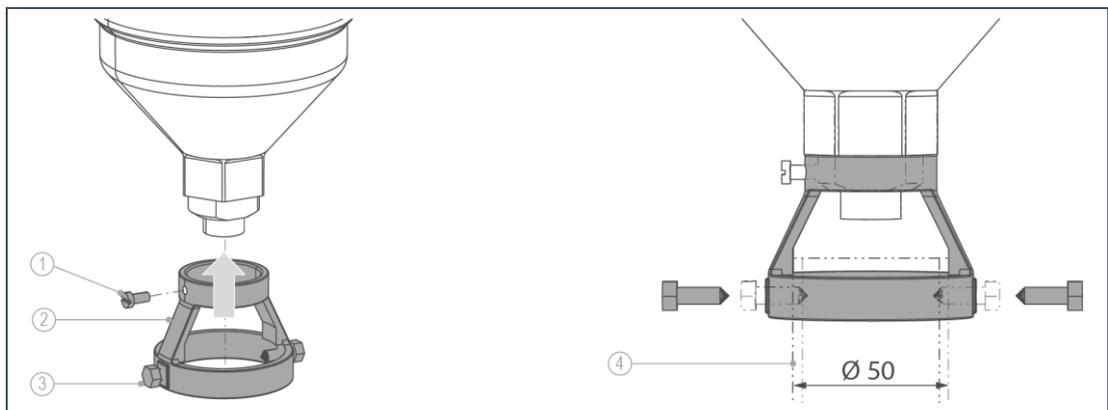
CAUTION: Spraying hot water at the drain outlet during backwashing.

- Danger of scalding during hot water filtration without waste water pipe.
- ▶ For hot water filtration, install a fixed waste water pipe at the drain connection.



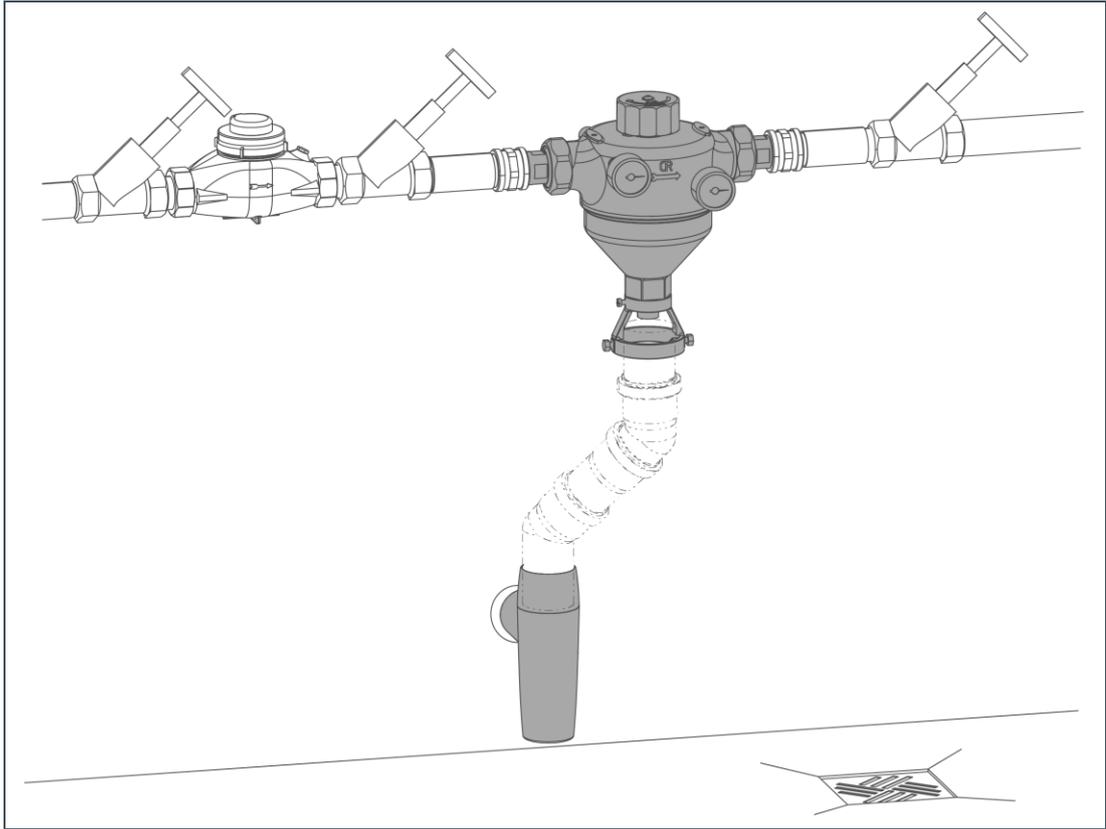
If it is not possible to install a drain pipe, the backwash water can be collected in a bucket/container.

- ▶ Install a waste water pipe (not included in the scope of supply) at the pre-installed drain connection with free outlet.



Item	Designation	Item	Designation
1	Clamping screw	2	Flushing water connection
3	Pointed screw	4	Waste water pipe (HT pipe DN 50)

1. Push the backwash water connection onto the collar of the filter funnel.
2. Fix the backwash water connection by means of the clamping screw.
3. Push the waste water pipe into the flushing water connection as far as it will go.
4. Fix the waste water pipe with the pointed screws.



5. Install a waste water pipe to the drain connection.
 - » The flushing water connection is installed.



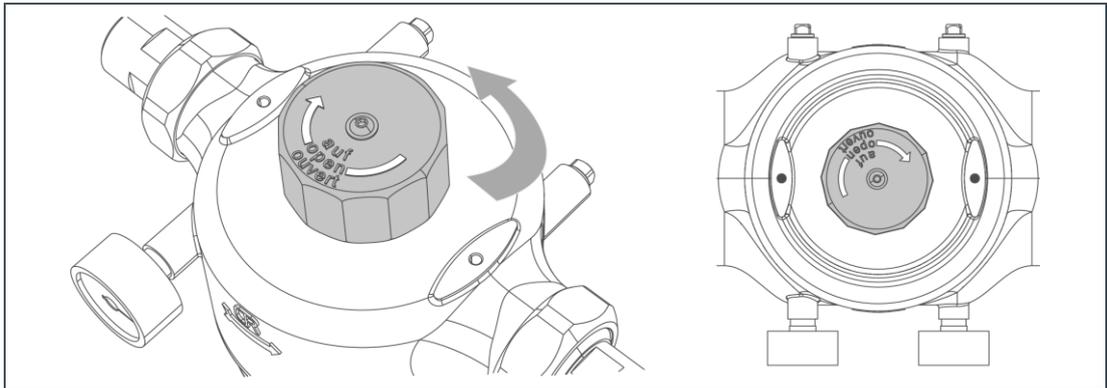
The drain connection is optionally available (refer to Accessories chapter 3.5). To install the drain connection, follow the installation instructions TD5-BS002.

5 Start-up

5.1 Preparations



Upon delivery, the drain outlet of the GENO backwash filters MX is open.



- ▶ Close the drain outlet by turning the backwash handwheel to the left (as far as it will go).

5.2 How to start up the product

- ▶ Carry out the following steps after the installation and after every maintenance.
 1. Open the shut-off valves.
 2. Open the nearest water withdrawal point after the filter as far as it will go.
 3. Apply the maximum operating pressure.
 - » The filter is vented.
 4. Check the filter for leaks.
 5. Carry out a backwash.
 - » The filter is in operation.

5.3 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 storage.
- ▶ Enter the initial start-up in the operation log.

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.

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

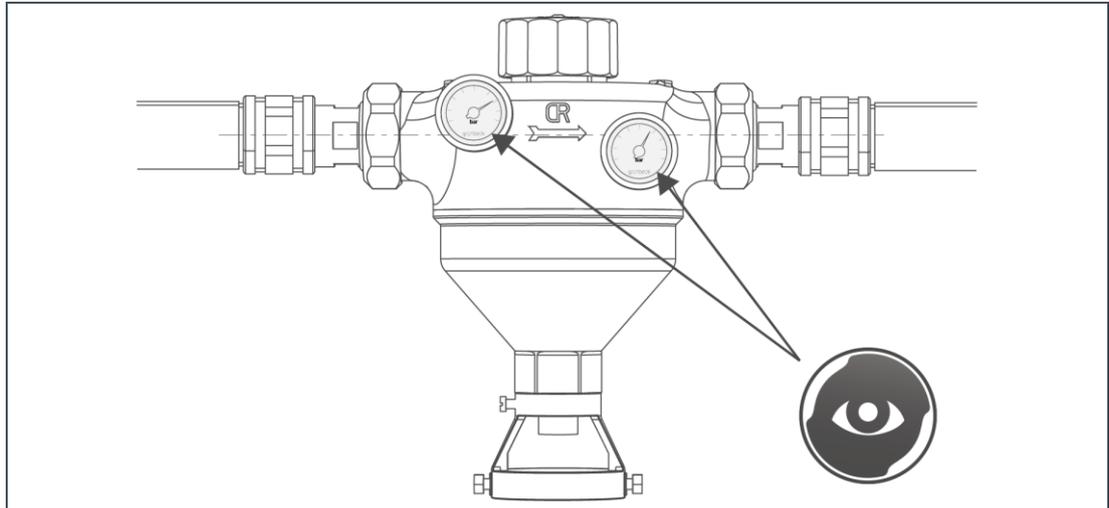
Grünbeck recommends a semi-annual and an annual maintenance according to DIN EN 806-5.

Operation	Interval	Execution
Inspection	2 months	Visual/function test
Maintenance	6 months	Backwash
	Annually	Check O-rings, flat gaskets and brush for wear, check tight fit, backwash
Maintenance	5 years	Recommended: Changing filter element, seals, suction nozzle unit

6.3 Inspection

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

1. Check the installation for leaks.
2. Open several water withdrawal points (generate max. flow rate).



3. Read the inlet and outlet pressure at pressure gauges.
4. Calculate the differential pressure: Inlet pressure (raw water pressure gauge) – Outlet pressure (pure water pressure gauge) = differential pressure.
5. If the differential pressure is > 0.4 bar, carry out backwashing.
6. If the system's differential pressure cannot be relieved by means of one or several backwash processes, a fault has occurred – refer to chapter 0.



We recommend performing a backwash every 2 months.

6.4 Maintenance



WARNING: Non-regular backwashing of the filter element

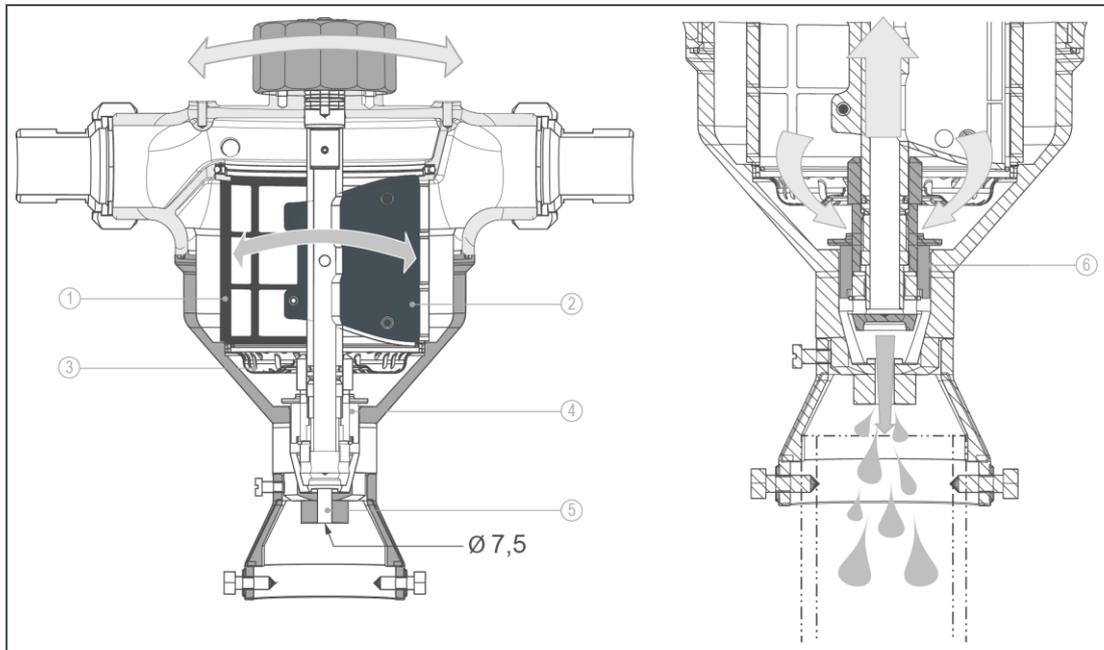
- Health risk due to contamination of the drinking water.
- ▶ Observe the intervals for inspection and backwashing of the filter element.

6.4.1 Semi-annual maintenance

Backwashing filter

If you do not have a drain connection installed, have a 10 litre bucket ready.

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



Item	Designation	Item	Designation
1	Filter element	2	Brush
3	Sieve bottom	4	Suction nozzle bottom
5	Backwash water outlet	6	Suction nozzle actuated



During the backwash process, filtered pure water is still available.

1. Turn the backwash handwheel slowly to the right (as far as it will go).
 - » The backwash procedure is activated.
 - The brush rotates and cleans the filter element from the inside.
 - The suction nozzle is raised and the drain outflow is released.
 - The water flows under pressure through the backwash water outlet into the waste water pipe.
2. Turn the backwash handwheel slowly to the left (as far as it will go).
 - » The backwashing process is terminated.
 - Depending on the contamination of the filter element, several backwashing cycles may be necessary – we recommend carrying out the backwashing procedure 3 times.



If the raw water is heavily contaminated, the standard backwash water outlet can be increased from Ø 6.5 mm to max. Ø 7.5 mm. This increases the cleaning effect and the amount of backwash water per backwash.



The measure is only allowed to be carried out by a specialist installer. Refer to technical service manual TD4_AM000 for GENO backwash filter MX.

6.4.2 Annual maintenance



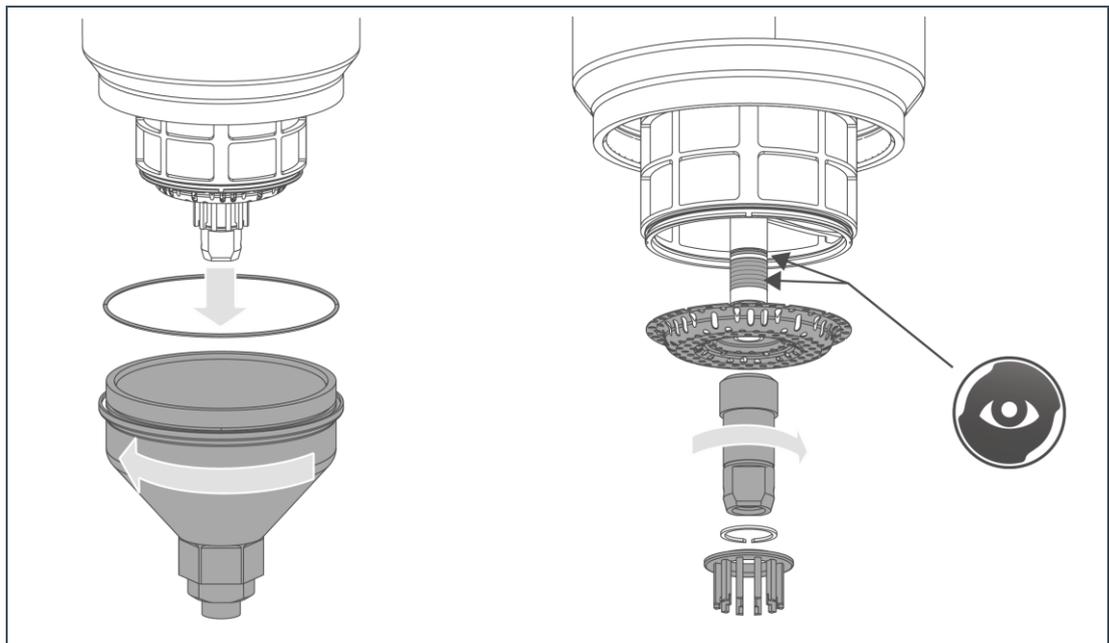
Carrying out annual maintenance work requires specialist knowledge. This maintenance work may only be performed by Grünbeck's technical service/authorised service company or by specialist installers trained by Grünbeck.

In addition to the semi-annual maintenance, the following work needs to be done:

1. Check the O-rings for wear.
2. Check the filter for firm seating and leaks.
3. Check the brushes for wear.

Opening filter and checking it

1. Close the shut-off valves (inlet and outlet).
2. Turn the backwash handwheel to the right (as far as it will go).
- » The filter is drained.

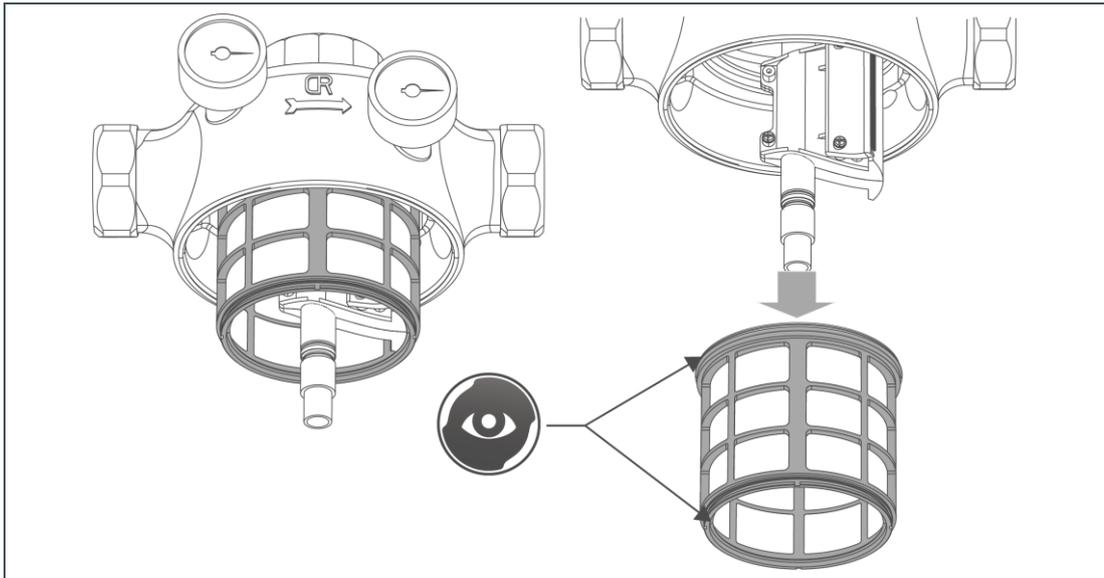


3. Unscrew the filter funnel – turn left.
4. Unscrew the lower suction nozzle from the upper pipe nozzle.
5. Remove the sieve bottom.
6. Check the thread coating and the O-ring for wear.

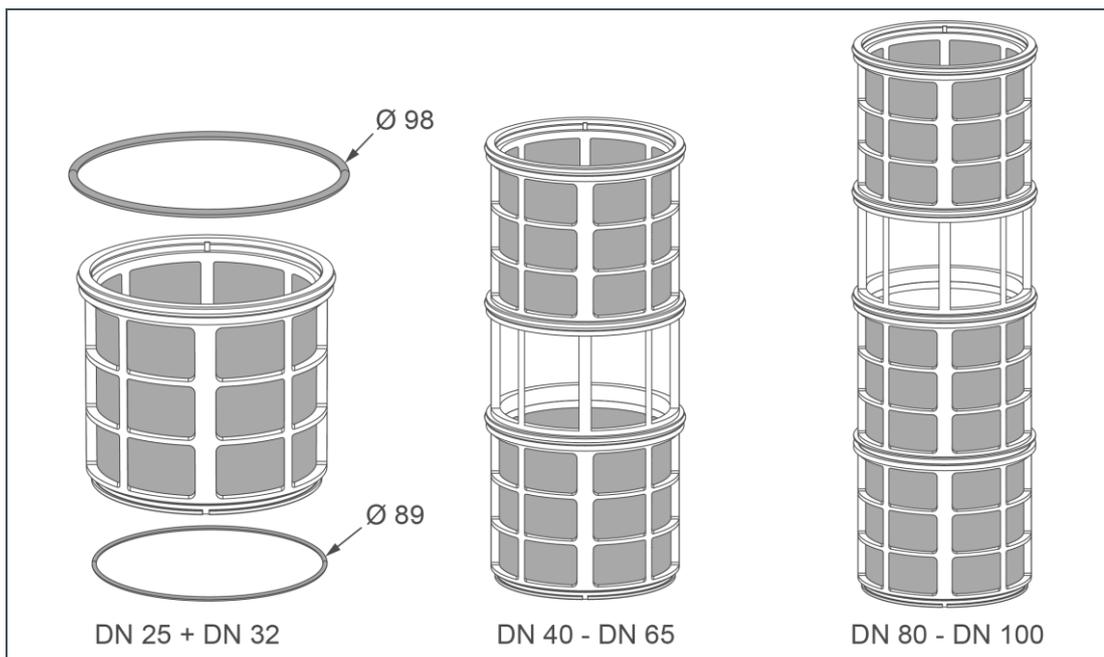


If the thread is worn, the complete suction nozzle unit must be replaced.

7. If the thread and O-ring are not worn:
Clean the thread and O-ring and apply food-safe grease, e.g. UNI-Silicon L641;
order no. 128 619.

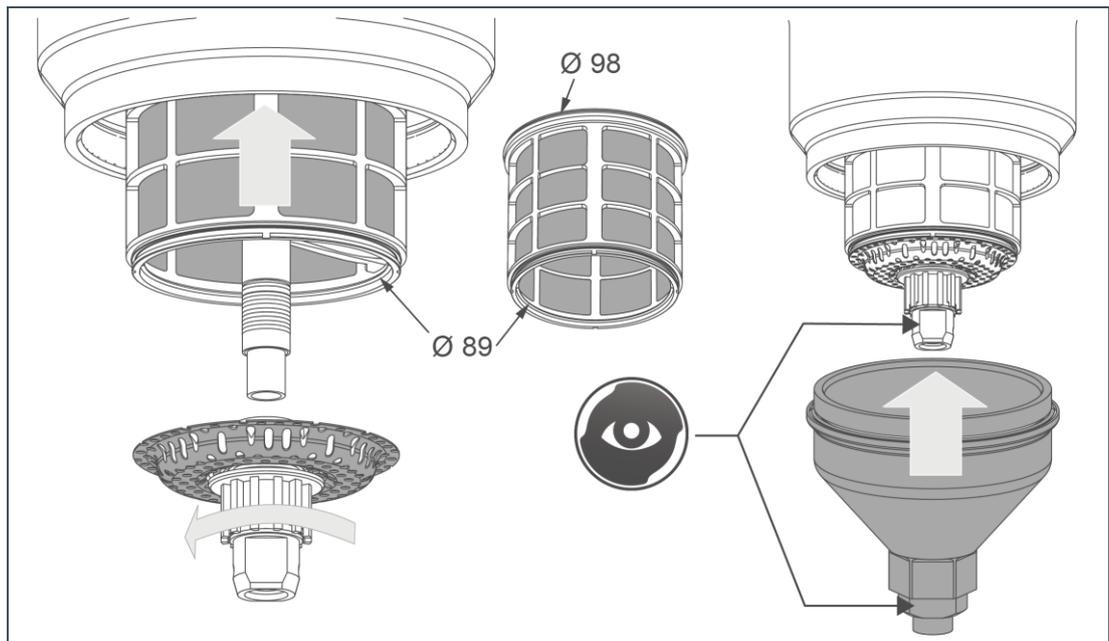


8. Remove the filter element.
9. Check the filter element for impurities and damage.
10. Check the O-rings of the filter element (outside and inside) for wear.



Depending on the filter size, different filter elements are combined. If one filter element is damaged, you can either replace one filter element or a complete set of filter elements. The individual filter elements are connected by means of a detachable snap connection.

Closing the filter



1. Fit the O-rings to the filter elements. Slide the filter elements with the larger \varnothing pointing forward over the suction nozzle into the housing of the filter.
2. Position the sieve bottom between the pipe nozzle and the suction nozzle bottom.
3. Screw the lower suction nozzle onto the upper pipe nozzle until the O-ring is just not visible any longer.
4. Slide the filter funnel onto the suction nozzle – the two-sided surface on the filter funnel must be parallel to the key surface on the suction nozzle.
5. Screw on the filter funnel.
6. Put the filter into operation – refer to chapter 5.
 - » The filter is ready to use.

6.5 Spare parts

For spare parts and consumables please contact your local representative. You can find these on the Internet at www.gruenbeck.de/Service/Ersatzteilkatalog.



According to DIN EN 13443 1, filter elements with 50 µm, 200 µm and 500 µm are not admissible for drinking water installations.

Use of filter elements with pore sizes: 50 µm, 200 µm and 500 µm only after consultation with Grünbeck Wasseraufbereitung GmbH – refer to Accessories on page 13.

Designation	Order no.		
	1" / 1¼"	1½" / 2" / DN 65	DN 80 / DN 100
100 µm filter element	107 061	107 062	107 063

6.6 Wearing parts



Although these parts are wearing parts, we grant a limited warranty period of 6 months

Designation	Order no.		
	1" / 1¼"	1½" / 2" / DN 65	DN 80 / DN 100
Set of seals (O-rings)		107 755	
Nozzle bottom		107 021e	
Brush		107 860e	
(Quantity required)	1 pc	2 pc	3 pc

7 Malfunction



WARNING: Danger of contaminated drinking water due to stagnation.

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

▶ If malfunctions cannot be remedied by the instructions given below, contact Grünbeck's technical service/authorised service company.

▶ Keep your equipment data (refer to chapter 1.7) ready.



Fault rectification is only allowed to be carried out by a specialist installer.

Refer to Technical service manual TD4_AM000 for GENO backwash filter MX.

Malfunction	Explanation	Remedy
Differential pressure exceeds 0.4 bar.	The filter elements are dirty. The shut-off valves are not open completely.	Carry out a backwash. Open the shut-off valves completely .
Despite several backwash processes, the differential pressure does not decrease.	The filter elements are severely contaminated, blocked.	Check the filter elements for stubborn impurities. Manually clean the filter elements with a brush – pay attention to hygiene. Replace the filter elements if necessary.
Water is discharged via the suction nozzle bottom. The drain nozzle cannot be closed using the backwash handwheel.	A particle got stuck between the lower suction nozzle and the filter funnel. Mechanical blocking in the backwash filter.	Carry out several backwash processes. If water continues to escape, check the filter for foreign particles and for damage at the built-in parts. If necessary, have the drain nozzle enlarged to Ø 7.5 mm.
	Seal at the lower suction nozzle defective or worn.	Check the tightness of the drain nozzle. If necessary, have the suction nozzle unit replaced.

Malfunction	Explanation	Remedy
The backwash handwheel cannot be operated or is difficult to move.	Mechanical blocking in the backwash filter.	Check the filter for foreign particles and for damage at the built-in parts. Replace the brushes if necessary.
	Thread of the suction nozzle worn.	Check the thread of the suction nozzle for wear. If necessary, have the suction nozzle unit replaced.
Water leaks from the backwash handwheel.	O-ring seal of upper pipe nozzle worn.	Dismount the upper pipe nozzle and replace the O-ring.
Little water flow during backwash.	Sieve bottom dirty, clogged.	Open the filter funnel and clean the sieve bottom.

8 Disposal

- ▶ Comply with the applicable national regulations.

8.1 Packaging

- ▶ Dispose of the packaging in an environmentally sound manner.
- ▶ Dispose of the filling material (foam) as non-recyclable waste.

8.2 Product



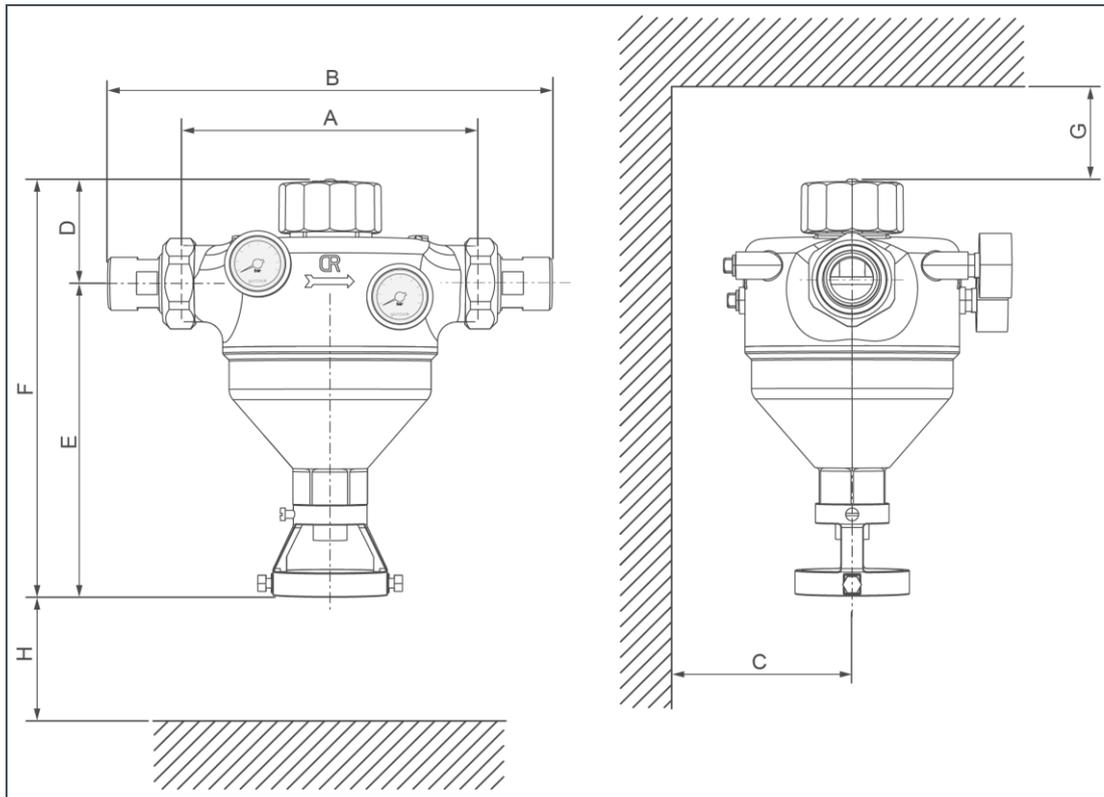
If this symbol (crossed-out wheellie bin) is on the product, this product or its electrical and electronic components must not be disposed of as household waste.

- ▶ 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.
- ▶ If your product contains batteries or rechargeable batteries, dispose of them separately from your product.

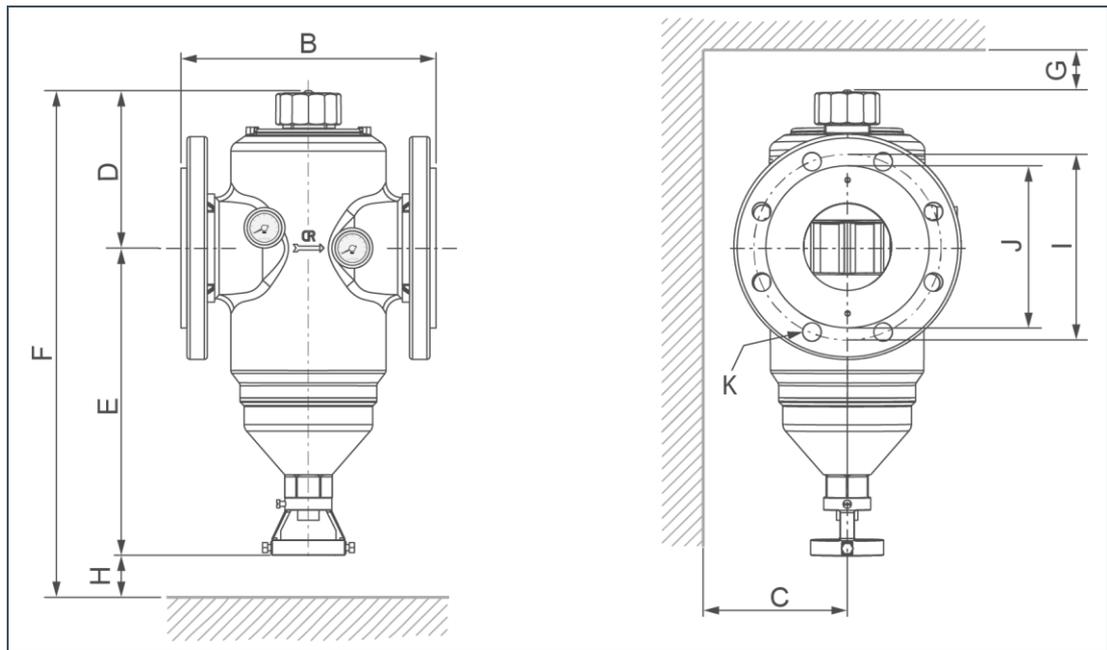


For more information on take-back and disposal, go to www.gruenbeck.com.

9 Technical specifications



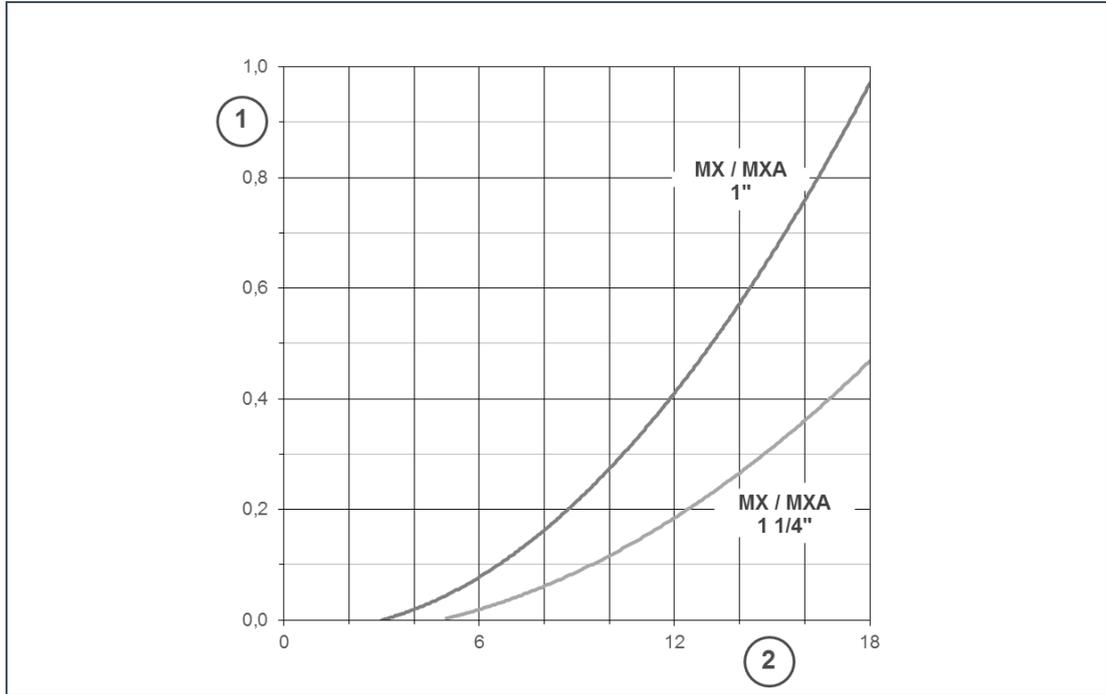
Dimensions and weights		GENO backwash filter MX with screw connections			
Nominal connection diameter		DN 25	DN 32	DN 40	DN 50
Connection diameter		1"	1¼"	1½"	2"
A	Installation length without screw connection [mm]	190	190	206	206
B	Installation length with screw connection [mm]	276	281	342	323
C	Distance to wall [mm]			≥ 90	
D	Installation height above centre of connection [mm]	63	63	143	143
E	Installation height up to centre of connection [mm]	194	194	212	212
F	Total height [mm]	257	257	355	355
G	Space above upper edge of filter [mm]			80	
H	Space required for replacing filter element [mm]	100	100	min. 100 / optimum from 215	
	Empty weight [kg]	5.6	5.7	9.7	9.7
Performance data					
	Flow rate at Δp 0.2 (0.5) bar [m³/h]	8.5 (13)	12 (18.5)	22 (30)	27 (38.5)
	K _v value [m³/h]	18	25	46	56
	Pore size [µm]	100			
	Largest/smallest pore size [µm]	110/90			
	Nominal pressure	PN 16			
	Minimum flow pressure [bar]	2			
	Operating pressure at water temperature [bar/°C]	≤ 10/90			
General					
	DVGW registration number	NW-9301BO0194			
	ÜA registration number	R-15.2.3-21-17496			
	The Office of the Vienna Provincial Government – City of Vienna				
	Water temperature [°C]	≤ 90			
	Ambient temperature [°C]	5 – 40			
Order no.		107 400	107 405	107 410	107 415



Dimensions and weights		GENO backwash filter MX with flange connection			
Nominal connection diameter		DN 65	DN 80	DN 100	
B	Installation length without counter-flanges PN 16 acc. to DIN	[mm]	220	250	250
C	Distance to wall	[mm]	≥ 95	≥ 105	≥ 115
D	Installation height above centre of connection	[mm]	143	153	153
E	Installation height up to centre of connection	[mm]	212	302	302
F	Total height	[mm]	355	455	455
G	Space above upper edge of filter	[mm]		80	
H	Space required for replacing filter element	[mm]	min. 100 optimum from 215	min. 100 optimum from 315	
I	Bolt circle diameter of flange	[mm]	145	160	180
Y	Sealing surface	[mm]	≤ 122	≤ 140	≤ 158
K	Number of M 16 screws	[pcs]	4	8	8
	Empty weight	[kg]	11.8	16	17
Performance data					
	Flow rate at Δp 0.2 (0.5) bar	[m ³ /h]	30 (47)	60 (96.5)	60 (98)
	K _v value	[m ³ /h]	69	124	138
	Pore size	[µm]		100	
	Upper/lower filter fineness	[µm]		110/90	
	Nominal pressure			PN 16	
	Minimum flow pressure	[bar]		2	
	Operating pressure at water temperature	[bar/°C]		≤ 10/90	
General					
	DVGW registration number		NW-9301B00194		
	ÚA registration number		R-15.2.3-21-17496		
	The Office of the Vienna Provincial Government – City of Vienna				
	Water temperature	[°C]	≤ 90		
	Ambient temperature	[°C]	5 – 40		
Order no.			107 420	107 425	107 430

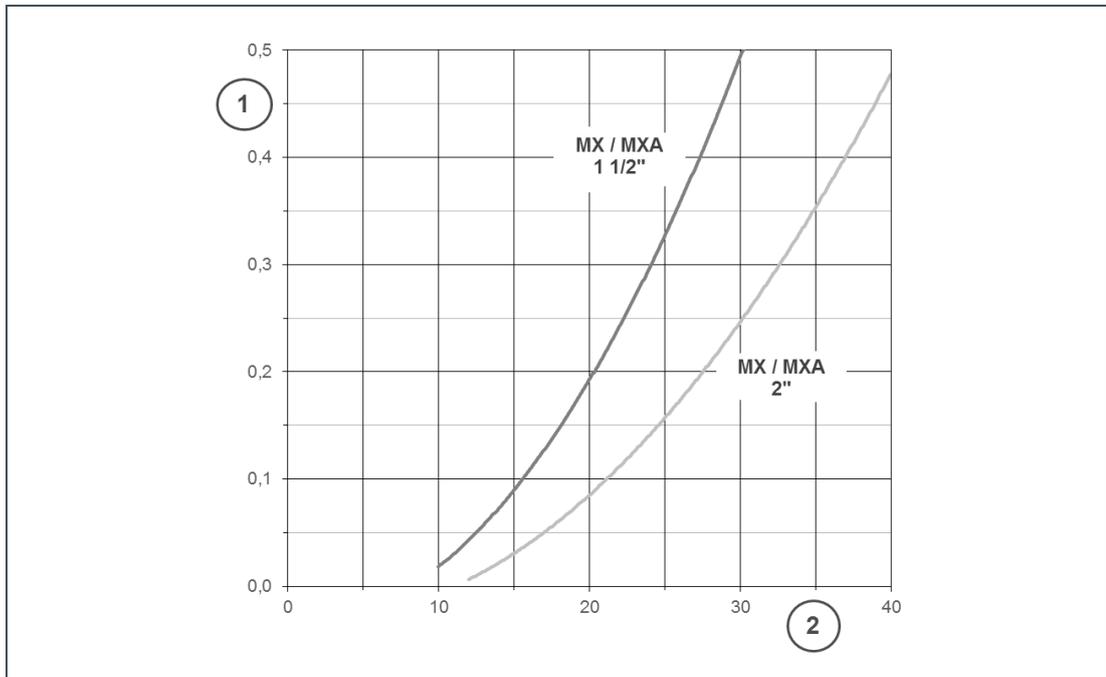
9.1 Pressure loss curves

Pressure loss curves of GENO backwash filter MX 1" and 1 1/4"



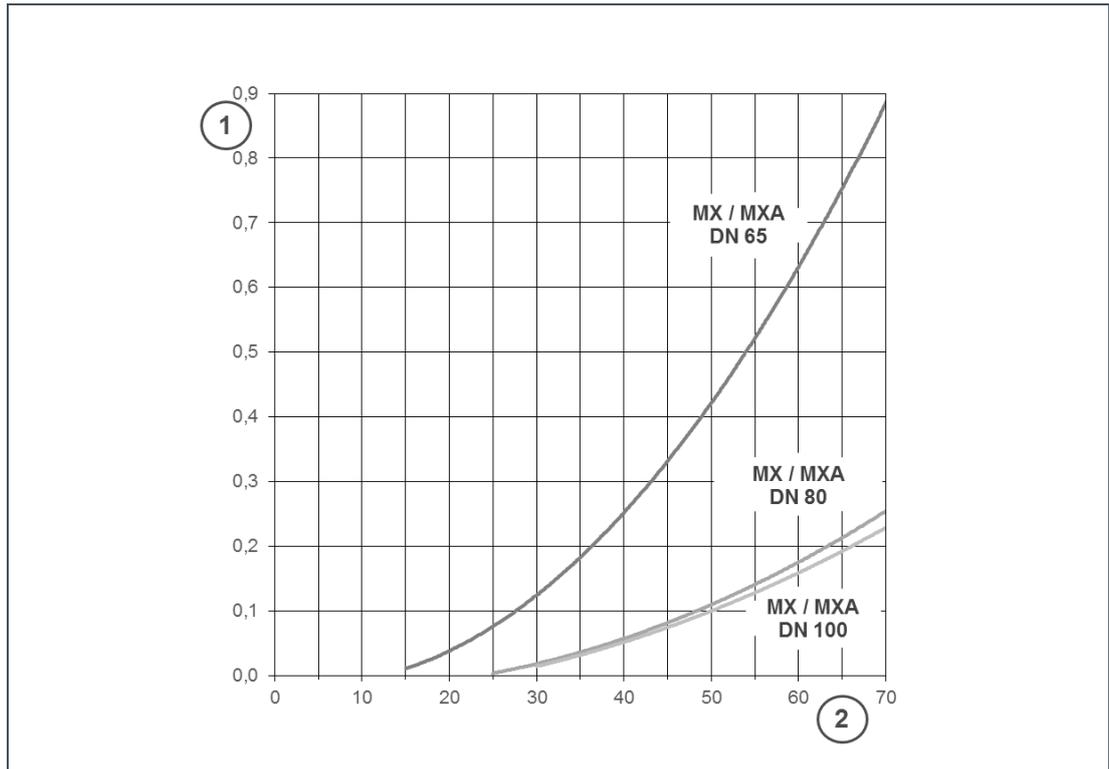
Item	Designation	Item	Designation
1	Pressure differential [bar]	2	Flow rate [m³/h]

Pressure loss curves of GENO backwash filter MX 1 1/2" and 2"



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

Pressure loss curves of GENO backwash filter MX DN 65, DN 80 and DN 100



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

Consumption data		
Backwash water volume at a water pressure of 3 bar and a backwash time of 1.5 min., approx.	[l]	40
Max. backwash volume flow at 9 bar, approx.	[m³/h]	4
Max. admissible differential pressure	[bar]	0.4

10 Operation log

Filter | GENO backwash filter MX _____

Serial no.: _____

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	_____ [m ³]
Remarks	
_____ _____ _____	
Start-up	
Company:	_____
Customer service technician:	_____
Work time certificate (no.):	_____
Date/signature:	_____

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