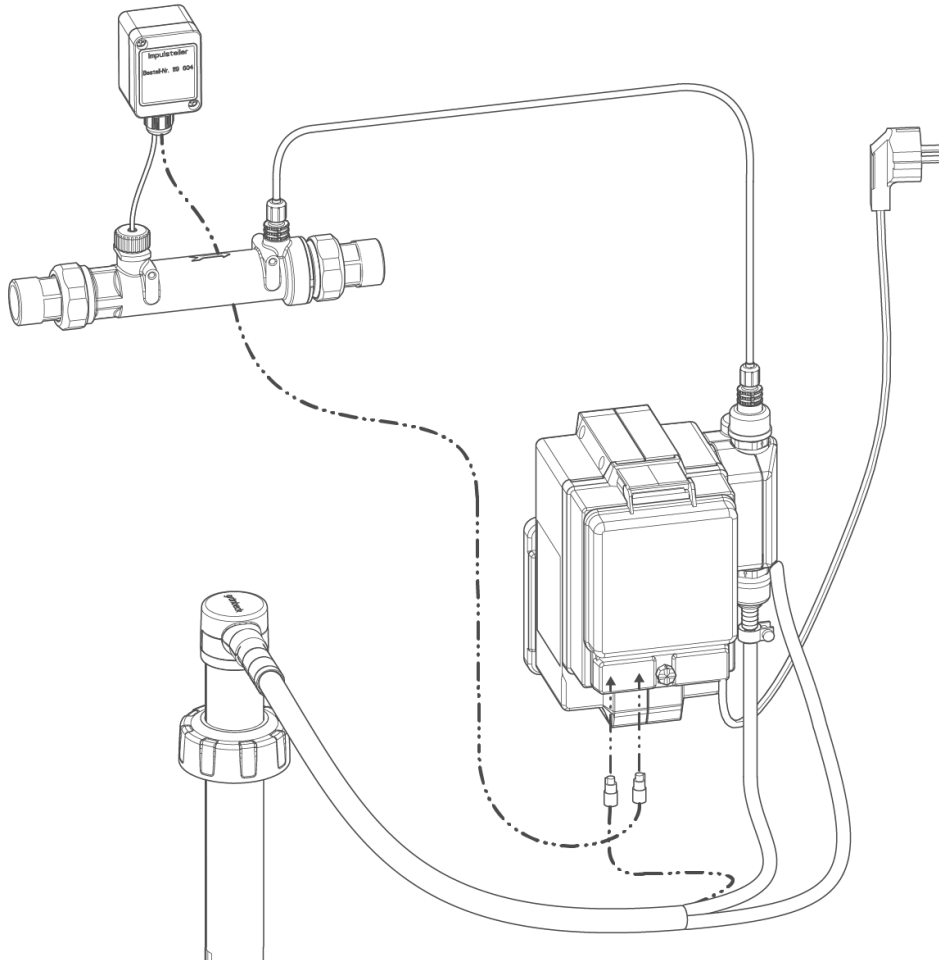


We understand water.



Dosing system | GENODOS DME 6 – 100

Operation manual

grünbeck

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Subject to technical modifications.
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Original operation manual

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1 Introduction

This manual is intended for owners/operating companies, users, as well as qualified specialists, and ensures the safe and efficient handling of the product. The manual is an integral part of the product.

- ▶ Carefully read this manual and the component instructions contained therein before you operate your product.
- ▶ Comply with all safety information and handling instructions.
- ▶ Keep this manual and all other applicable documents, so that they are available when needed.

Illustrations in this manual are for basic understanding and can differ from the actual design.

1.1 Validity of the manual

This manual applies to following products:

- Dosing system GENODOS DME 6
- Dosing system GENODOS DME 10
- Dosing system GENODOS DME 20
- Dosing system GENODOS DME 30
- Dosing system GENODOS DME 80
- Dosing system GENODOS DME 100
- Special versions which essentially correspond to the indicated standard products. For information on changes, please refer to the respective information sheet that is enclosed, if applicable.

1.2 Other applicable documents

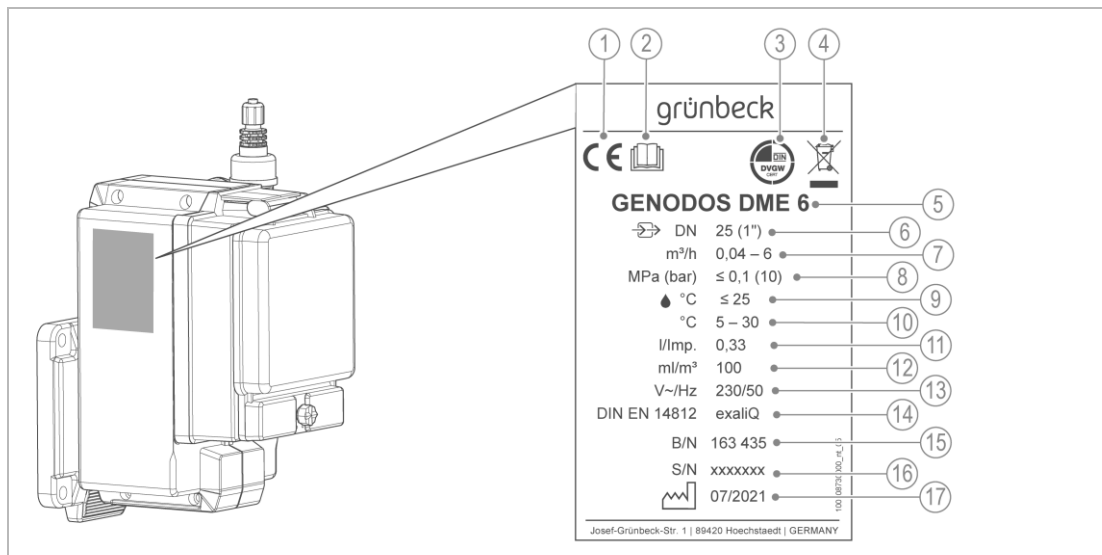
- Operation manual of GENODOS pump GP
- Technical Information on accessories for GENODOS pump GP
- Safety data sheets for exaliQ mineral solutions

1.3 Product identification

You can identify your product by means of the product designation and the order number on the type plate.

- ▶ Check whether the products indicated in chapter 1.1 correspond to your product.









The type plate is located on the side of the GENODOS dosing pump GP.



Designation	
1	CE mark
2	Obey the operation manual
3	DVGW test mark
4	Disposal information
5	Product designation
6	Nominal connection diameter
7	Operating range
8	Operating pressure
9	Drinking water temperature

Designation	
10	Water/ambient temperature
11	Pulse sequence
12	Dosing volume
13	Mains connection
14	DIN EN 14812 compliance as suitable dosing agent
15	Order no.
16	Serial no.
17	Date of manufacture

1.4 Symbols used

Symbol	Meaning
	Danger and risk
	Important information or prerequisite
	Useful information or tip
	Written documentation required
	Reference to further documents
	Work that may only be carried out by qualified specialists
	Work that must be carried out by qualified electricians only
	Work that is only allowed to be carried out by technical service personnel

1.5 Depiction of warnings

This manual contains information with which you must comply for your own personal safety. The information and instructions are highlighted by a warning symbol and are structured as shown below:



SIGNAL WORD Type and source of the hazard

- Possible consequences
- ▶ Preventive measures

The following signal words are defined depending on the degree of danger and might be used in this document:

Warning sign and signal word	Consequences when disregarding the information/instructions	
 DANGER		Death or serious injuries
 WARNING	Personal injury	Possible death or serious injuries
 CAUTION		Possible moderate or minor injuries
NOTE	Damage to property	Possible damage to components, the product and/or its functions, or anything in its vicinity

1.6 Demands on personnel

During the individual lifecycle phases of the system, different persons carry out work on the system. This work requires different qualifications.

1.6.1 Qualification of personnel

Personnel	Prerequisites
User	<ul style="list-style-type: none"> No special expertise required Knowledge of the tasks assigned Knowledge of possible dangers in case of inappropriate behaviour Knowledge of the required protective equipment and protective measures Knowledge of residual risks
Owner/operating company	<ul style="list-style-type: none"> Product-specific expertise Knowledge of statutory regulations on work safety and accident prevention
Qualified specialist <ul style="list-style-type: none"> Electrical engineering Sanitary engineering (HVAC and plumbing) Transport 	<ul style="list-style-type: none"> Professional training Knowledge of relevant standards and regulations Knowledge of detection and prevention of potential hazards Knowledge of statutory regulations on accident prevention
Technical service (Grünbeck's technical service/authorised service company)	<ul style="list-style-type: none"> Extended product-specific expertise Trained by Grünbeck

1.6.2 Authorisations of personnel

The following table describes which activities are allowed to be performed by whom.

	User	Owner/ operating company	Qualified specialist	Technical service
Transport and storage		X	X	X
Installation and mounting			X	X
Start-up			X	X
Operation and handling	X	X	X	X
Cleaning	X	X	X	X
Inspection	X	X	X	X
Maintenance			X	X
			X	X
Troubleshooting	X	X	X	X
Repair			X	X
Shutdown and restart		X	X	X
Dismantling and disposal		X	X	X

1.6.3 Personal protective equipment

- ▶ As an owner/operating company, ensure that the required personal protective equipment is available.

The following components fall under the heading of personal protective equipment (PPE):



Protective gloves



Protective footwear



Protective overall



Protective goggles



Protective apron



Mask

2 Safety

2.1 Safety measures

- Only operate your product if all components are installed properly.
- Obey the local regulations on drinking water protection, accident prevention and occupational safety.
- Do not make any changes, alterations, extensions or program changes on your product.
- Only use genuine spare parts for maintenance or repair.
- Keep the premises locked to prevent unauthorised access and to protect endangered or untrained persons from residual risks.
- Comply with the maintenance intervals (refer to chapter 8.2). Failure to comply can result in the microbiological contamination of your drinking water system.
- Be aware of a possible risk of slipping due to leaking water on the floor.

2.1.1 Mechanical hazards

- You must never remove, bridge, or otherwise tamper with safety equipment.
- For all work on the system that cannot be carried out from the ground, use stable, safe and self-standing access aids (e.g. stepladders).
- Make sure that the system is installed so that it cannot tip over and that the stability of the system is guaranteed at all times.

2.1.2 Pressure-related hazards

- Components can be under pressure. There is a risk of injuries and damage to property due to escaping water and unexpected movement of components. Check the pressure pipes on the system regularly for leaks.
- Before starting repair and maintenance work, make sure that all affected components are depressurised.

2.1.3 Electrical dangers

There is an immediate danger of fatal injury from electric shock when touching live components. Damage to the insulation or individual components can be life-threatening.

- Only have a qualified electrician carry out electrical work on the system.
- In case of damage to live components, switch off the voltage supply immediately and arrange for repair.
- Switch off the voltage supply before working on electrical system components. Discharge the residual voltage.

- Never bridge electrical fuses. Do not disable fuses. Use the correct current ratings when replacing fuses.
- Keep moisture away from live parts. Moisture can cause short-circuits.

2.1.4 Danger due to chemicals

- Chemicals can be hazardous to the environment and health. They can cause skin and eye burns as well as irritation of the respiratory tract or allergic reactions.
- Avoid any skin/eye contact with chemicals.
- Use personal protective equipment.
- Read the safety data sheet before handling chemicals. Adhere to the instructions for various activities/situations.
- Current safety data sheets for chemicals are available for download at <https://www.gruenbeck.de/en/info-centre/safety-data-sheets/>.
- Follow in-house instructions when handling chemicals. Make sure that protective and emergency equipment such as emergency showers and eyewash are available where required, and functional.

Mixing and residual amounts of chemicals

- Do not mix different chemicals. Unforeseeable chemical reactions with risk of death may occur.
- Dispose of residual amounts of chemicals in accordance with local regulations and/or in-house instructions.
- Residual amounts from used containers should not be transferred into containers with fresh chemicals in order not to impair the effectiveness of the chemicals.

Labelling/Minimum shelf life/Storage of chemicals

- Check the labelling of the chemicals. The labelling of chemicals must not be removed or rendered illegible.
- Do not use unknown chemicals.
- Comply with the use-by date (minimum shelf life) stated on the label.
- If stored incorrectly, chemicals could change their state of matter, crystallize, outgas, or lose their effectiveness. Store and use the chemicals at the indicated temperatures only.

Cleaning/Disposal

- Immediately absorb spilled chemicals with suitable binding agents.
- Collect and dispose of chemicals in such a way that they cannot pose any risks to people, animals, or the environment.

2.1.5 Groups of persons requiring protection

- This product must not be used by persons (including children) with limited abilities, lack of experience or knowledge.
- Children should be supervised to ensure that they do not play with the product.

2.2 Product-specific safety instructions

- ▶ Always route lines such as dosing hose, mains cable, pulse connecting cable and suction line away from traffic routes in order to prevent tripping and tearing them off.
- ▶ Secure the lines of the dosing system at the installation site where public traffic can be expected.



On-site encoder voltage at the fault signalling contact of the dosing pump.

- ▶ Only have qualified electricians carry out work on the electrical equipment.
- ▶ Switch off the on-site transmitter voltage prior to working on the dosing pump.
- ▶ Comply with the 5 safety rules of electrical engineering.

2.2.1 About mineral solutions:



WARNING

Skin and eye contact with mineral solution

- Chemical burns to the eyes, irritation of the skin and respiratory tract
- ▶ Use personal protective equipment (protective goggles, gloves and clothing) when handling open containers and when working on the dosing system.
- ▶ Use approved exaliQ mineral solutions only.
- ▶ Do not mix any mineral solutions.
- ▶ Do not transfer any mineral solutions into other canisters.
- ▶ Do not use mineral solutions if their shelf life has expired.

2.2.2 Safety-related components



Safety-related components must be replaced by original spare parts only.

- Dosing pump, pump head
- Dosing hose, dosing valve
- All pressurised parts and parts that come into contact with the media

2.2.3 Signals and warning devices



The affixed information and pictograms must be clearly legible. They must not be removed, soiled, or painted over.

- ▶ Obey all warnings and safety instructions.
- ▶ Immediately replace illegible or damaged symbols and pictograms.

2.3 Conduct in emergencies



WARNING

Pressurised media lines

- After the mains plug is disconnected, media lines on the pressure side are still pressurised.
- Dosing media splashing out.
- ▶ Use personal protective equipment.
- ▶ Relieve the pressure on the pressure side of the dosing pump before working on the pump head, its equipment parts or the dosing hose.

2.3.1 If the dosing agent escapes

1. Disconnect the product from the voltage supply.
2. Locate the leak.
3. Eliminate the cause of the escaping dosing agent.
4. Contact customer service.

2.3.2 In case of incorrect dosage/overdosing

1. Disconnect the product from the voltage supply.
2. Contact customer service.

3 Product description

3.1 Intended use

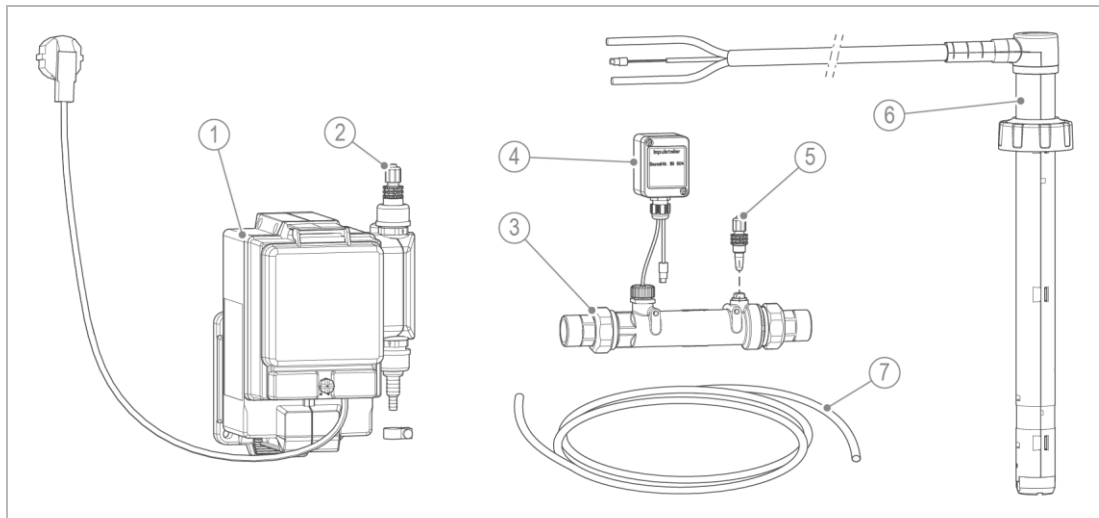
The mineral substances protect the water pipes and the connected water carrying system components (fittings, devices, operating equipment, household appliances, boilers, production plants, etc.) from malfunctions and damage due to scale deposits and/or corrosion.

- The dosing system GENODOS DME is designed for volume-based dosing of exaliQ mineral solutions into the drinking and industrial water pipes of commercial and industrial buildings.
- The dosing system GENODOS DME is suitable for long-lasting as well as continuous flows.

3.1.1 Foreseeable misuse

- Dosing chemicals other than exaliQ mineral solutions is **not** approved by Grünbeck Wasseraufbereitung GmbH and results in the loss of warranty claims.

3.2 Product components



Designation	Function
1 Dosing pump	GENODOS GP ../40 with dosing volume pre-set to 100 ml/m ³ , under seal
2 Hose connection kit	in sizes: Ø 2/4 for DME 6/10/20/30 or Ø 4/6 for DME 80/100
3 Contact water meter	with pulse sensor, dosing point with non-return valve and water meter screw connection
4 Pulse divider	With Hall pulse cable and coupling socket, 4-pole, for external connector plug (red) on the dosing pump
5 Dosing valve	for injection point on the contact water meter
6 Suction lance	with integrated empty signal, pre-alarm, suction and return line for 15 L canisters of exaliQ mineral solution
7 Dosing hose	in sizes: Ø 2/4 for DME 6/10/20/30 or Ø 4/6 for DME 80/100

3.3 Functional description

By means of a contact water meter with pulse generator, the dosing system GENODOS DME registers the water volume flowing through and sends the control pulses to the electronics of the dosing pump GENODOS GP according to the pulse interval of the contact water meter.

The electronics controls the dosing pump and thereby determines the dosing volume of the mineral solution into the water pipe.

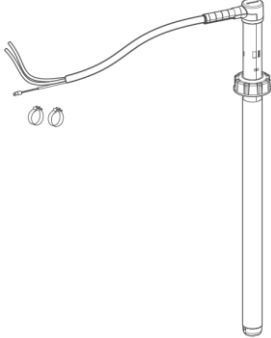
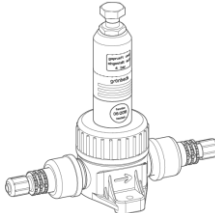
The mineral solution is withdrawn from the respective canister containing the mineral solution by means of a suction lance and added to the water.

An electronic level control switches the pump off when the canister containing the mineral solution is empty.

A yellow LED on the electronics of dosing pump GENODOS GP visually signals the need for a replacement of the canister.

3.4 Accessories

Your product can be retrofitted with accessories. Please contact your local Grünbeck representative or Grünbeck's headquarters in Hoechststadt/Germany for details.

Illustration	Product	Order no.
	<p>Conversion kit GENODOS DME, 60 litre suction lance For conversion to 60 L canisters</p>	<p>163 765</p>
	<p>Pressure maintaining valve Spring-loaded diaphragm valve</p>	<p>Refer to Technical Information (TI) on accessories</p>

3.5 Mineral solutions

Grünbeck Wasseraufbereitung GmbH confirms that the mineral substances contained in the colourless liquid concentrates correspond to the publication of the list of treatment substances and disinfection procedures in accordance with §11 of the German Drinking Water Ordinance – 19th amendment (status: December 2017).

Mineral solution	Effect	Material
exaliQ control	Rehabilitation	Galvanised pipes
For the rehabilitation of corroded zinc pipes (often recognisable by brown-coloured water). After sanitation (approx. 6 months): Change to a different exaliQ dosing agent.		
exaliQ safe	Corrosion protection	Galvanised pipes and copper materials/brass
For corrosion protection of water in the hardness range soft to medium (up to 14 °dH) as well as downstream of water softeners. For water temperatures up to 60 °C. To reduce the introduction of heavy metals (e.g. lead).		
exaliQ safe+	Corrosion protection and hardness stabilisation	Galvanised pipes and copper materials/brass
For hardness stabilisation and corrosion protection of water in the hardness range up to 21 °dH and to reduce the introduction of heavy metals (e.g. lead). For water temperatures up to 60 °C. For water hardness > 21 °dH, a water softener (e.g. softliQ:SD21) is recommended for hardness treatment. Subsequent changeover to exaliQ safe.		
exaliQ pure	Hardness stabilisation	Galvanised pipes and copper materials/brass
For circulation water in solar systems or installation of the dosing technology in the cold water inlet to the decentralised water heater. For high temperatures up to 80 °C and/or hard water with a total hardness > 21 °dH (total alkalinity > 15 °dH). <i>Note: Copper and brass materials are only suitable for warm water. Consultation with Grünbeck Wasseraufbereitung GmbH recommended prior to first application.</i>		
exaliQ neutra	Increase of pH value	Galvanised pipes and copper materials/brass
For corrosion protection in soft water with high carbon dioxide concentration, even after water softeners. Corrosion protection by binding free carbon dioxide and raising the pH value.		



The shelf life of the mineral solutions is 2 years following the filling date (protected against cold and light).

- After opening the canister, it is recommended to use the contents within 6 months, but within 12 months at the latest.

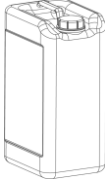



When changing from the mineral solution to another dosing agent, the dosing system must be flushed (refer to chapter 8.6).

The mineral solutions are hygienically packaged at the factory and sterilely sealed with a secured screw cap.

The ready-to-use concentrates are designed for a pump capacity of 100 ml/m³ drinking water flow.

3.5.1 Canister designs

Illustration	Product	Design	Order no.
	15 l plastic canister, stackable	exaliQ control	114 071
	1 canister is sufficient for approx. 150 m ³ drinking water treatment	exaliQ safe	114 072
		exaliQ safe+	114 073
		exaliQ pure	114 074
		exaliQ neutra	114 075
	60 l plastic canister, stackable	exaliQ control	114 081
	1 canister is sufficient for approx. 600 m ³ drinking water treatment	exaliQ safe	114 082
		exaliQ safe+	114 083
		exaliQ pure	114 084
		exaliQ neutra	114 085
Conversion kit GENODOS DME, 60 l suction lance required (refer to chapter 3.4).			

4 Transport and storage

4.1 Transport

- ▶ Transport the product in its original packaging only.

4.2 Storage

- ▶ When storing it, protect the product from the effects of the following:
 - Moisture, wetness
 - Environmental impacts such as wind, rain, snow, etc.
 - Frost, direct sunlight, severe heat exposure
 - Chemicals, dyes, solvents and their vapours

4.3 Transport/storage of the canisters

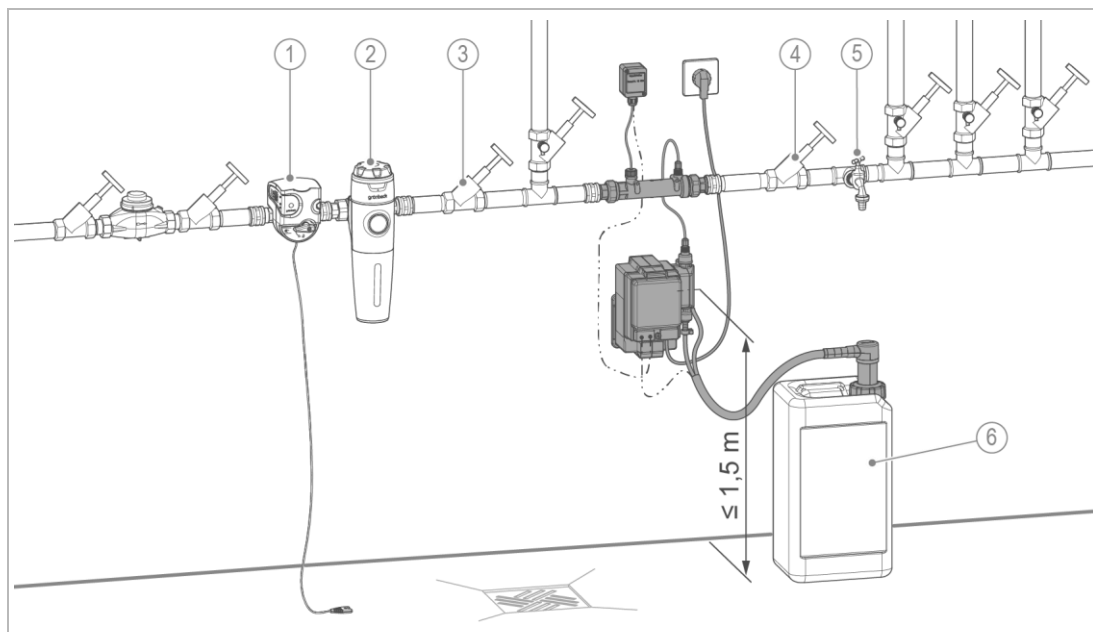
- ▶ Ensure that unauthorised persons, e.g. children, do not have direct access to mineral solutions.
- ▶ When storing the 15 l and 60 l canisters, do not stack more than 2 on top of each other.
- ▶ Secure the stacked canisters against falling over – place them against a solid wall or leave them secured on the pallet.

5 Installation



The installation of the system represents a major intervention in the drinking water system and only a qualified specialist may install such systems.

Installation example



Designation	
1	Safety device protectliQ
2	Drinking water filter pureliQ
3	Inlet shut-off valve

Designation	
4	Outlet shut-off valve
5	Water withdrawal point
6	Canister containing exaliQ mineral solution

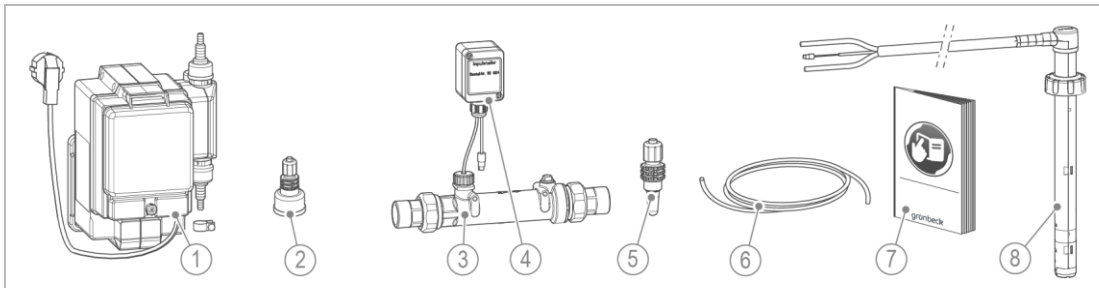
5.2 Requirements for the installation site

Obey the local installation directives, general guidelines and technical specifications.

- The installation site must be frost-proof and ensure the system's protection from direct sunlight, chemicals, dyes, solvents and their vapours, etc.
- The installation site must be adequately illuminated and ventilated.
- On-site obstacles/restrictions must be indicated in advance and taken into account in the design of the system.
- Always install a drinking water filter and, if required, a pressure reducer (e.g. fine filter pureliQ) upstream from the product.
- For the electrical connection a Schuko socket is required within a distance of approx. 1.2 m of the system.
 - The socket outlet must be fitted in such a way that the device can be unplugged immediately and at any time in the event of malfunctions or maintenance work.

- A floor drain suitable for the system size must be available at the installation site or a protection device e.g. protectliQ or a protection device with water stop of the same quality must be installed.
- Downstream of the dosing point, a water withdrawal point must be available.
- The dosing systems GENODOS DME are DVGW-certified and can be installed without any additional safety devices (system separator, large pipe loop).
- Prior to using the dosing system GENODOS DME, you need to know the composition of the water.
- The dosing pump must not be mounted more than max. 1.5 m above the canister bottom (preferably as low as possible).

5.3 Checking the scope of supply



Designation		Designation	
1	Dosing pump GENODOS GP with dosing volume pre-set to 100 ml/m ³ , under seal	5	Dosing valve for dosing hose Ø 2/4 or Ø 4/6
2	Hose connection kit for dosing hose Ø 2/4 or Ø 4/6	6	Dosing hose
3	Contact water meter	7	Operation manual
4	Pulse divider	8	15 L suction lance for exaliQ mineral solutions

► Check the scope of supply for completeness and damage.

5.4 Water installation

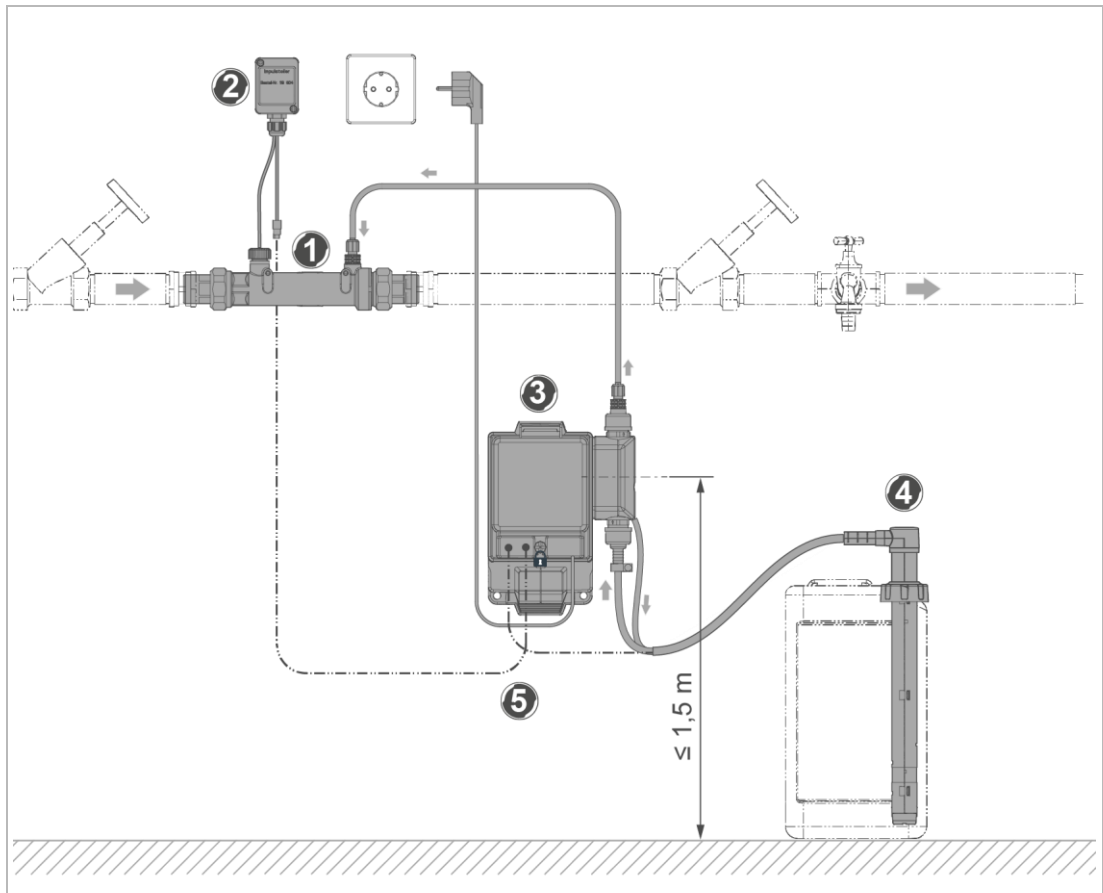


Obey the operation manuals below:

- Dosing pump GENODOS pump GP and Technical Information on accessories
- Contact water meter
- Pulse divider
- Optional pressure maintaining valve



- ▶ Install all components of the dosing system as compact as possible (rolled up with cable ties).
- ▶ Lay all lines without bends and free of mechanical stress.
- ▶ Leave a reserve length when shortening the dosing hose.
- ▶ Lay the dosing hose protected from hot and sharp-edged surfaces.
- ▶ Lay the suction line in such a way that it is constantly rising to the metering station.
- ▶ Do not leave any suction lines on the floor.



1. Install the contact water meter into the pipe in a horizontal position – respect the flow direction.
 2. Mount the pulse divider.
 3. Mount the dosing pump and connect the dosing hose to the hose connection kit and the dosing valve on the contact water meter.
 4. Connect the suction and return hose of the suction lance to the dosing pump.
 5. Establish the contacts of the suction lance for empty signal and of the pulse generator with the dosing pump.
- » The components of the dosing system are installed.

6 Start-up



The initial start-up of the system must be carried out by technical service personnel only.

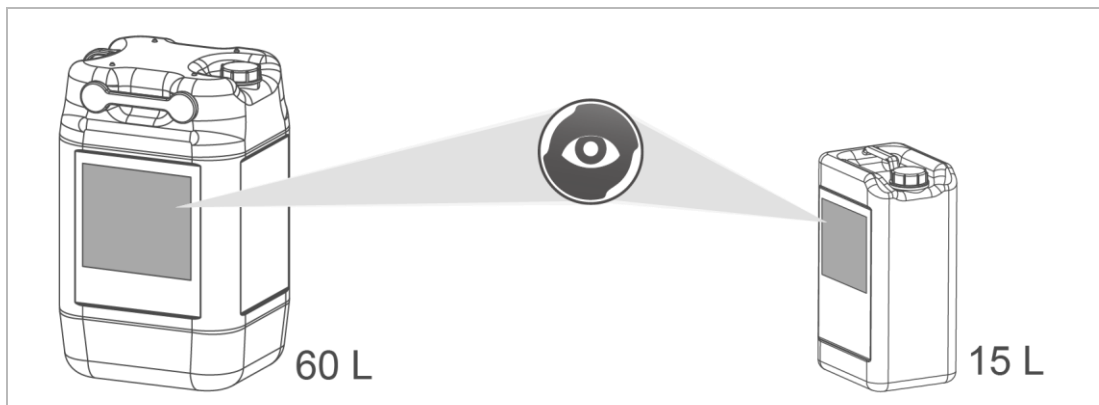
- ▶ Before initial start-up, check whether all the components required for safe operation of the dosing system have been installed.

6.1 Connect the canister



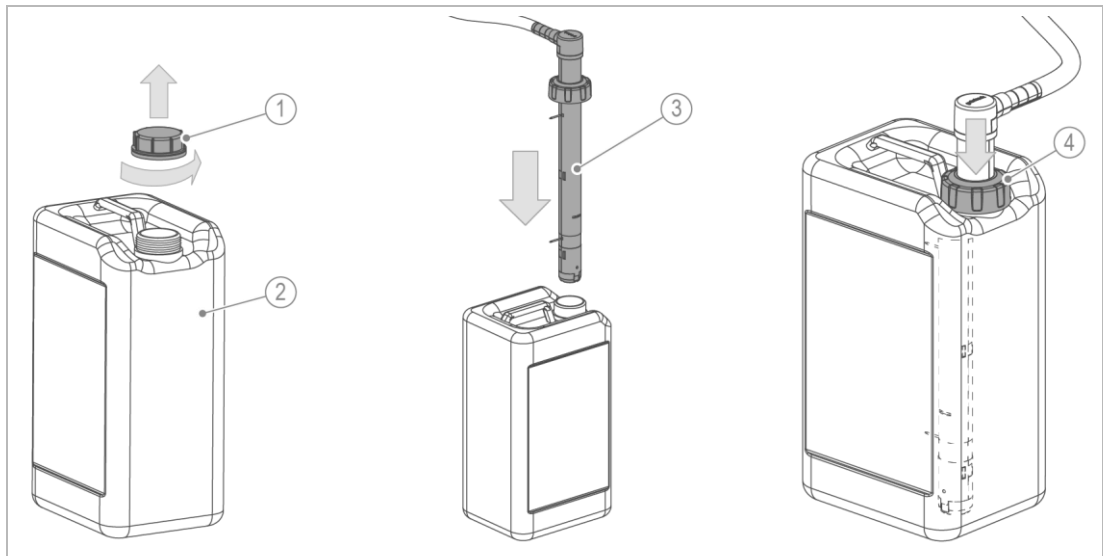
WARNING Skin and eye contact with mineral solutions

- Depending on the type of mineral solution, it can burn the eyes and irritate the skin and respiratory tract.
- ▶ For sodium hydroxide solution (exaliQ neutra), use eye protection goggles, sturdy clothing and protective gloves.
- ▶ Observe the safety data sheets and follow the instructions.
- ▶ Before opening a container, pay attention to the following:
 - Type of mineral solution (designation, article number and colour)
 - Filling date & shelf life



- ▶ Only use genuine mineral solutions by Grünbeck Wasseraufbereitung GmbH. Grünbeck Wasseraufbereitung GmbH cannot accept any liability for the use of third-party products.

6.1.1 Connecting the suction lance to the canister



Designation	Designation
1 Screw cap	3 Suction lance
2 Canister	4 Sliding cover

1. Unscrew the screw cap.
2. Keep the screw cap – to close the dosing tank after use.
3. Vertically insert the suction lance into the canister from above.
4. Fix the suction lance with the sliding cover.
 - » The suction lance of the dosing system is connected to the full canister.
 - Make sure that the canister is stable and cannot tip over.

6.2 Checking the system

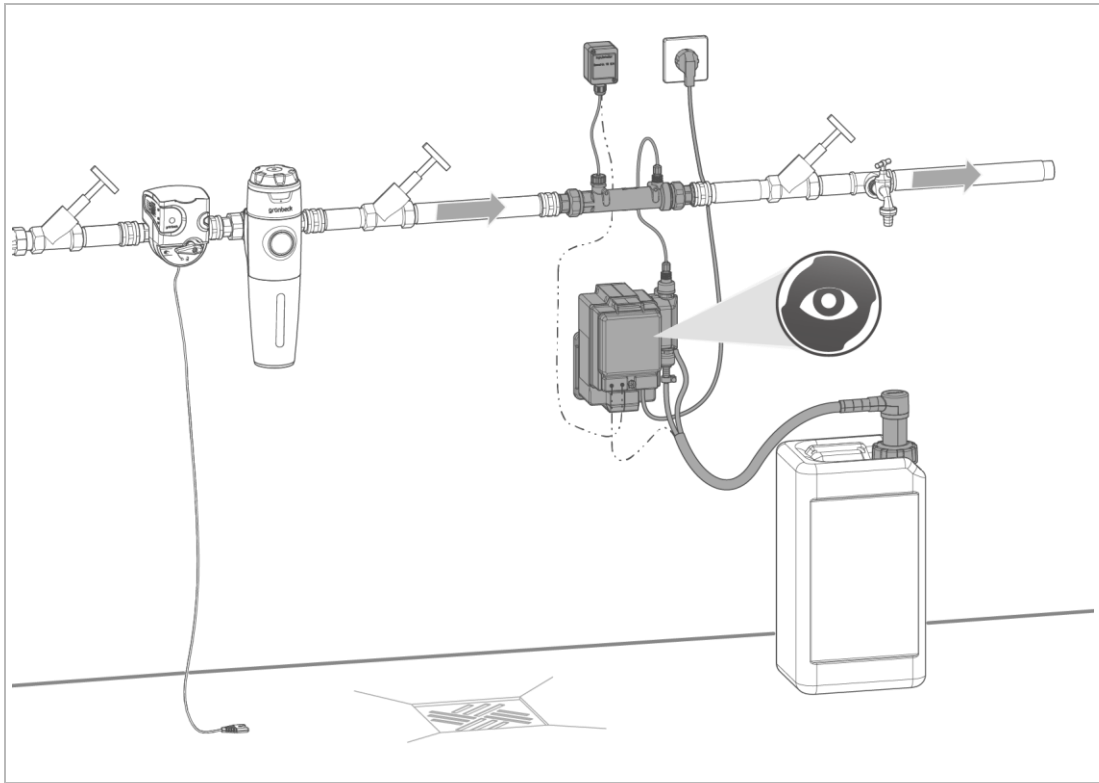


The setting of the factory-sealed dosing pump GENODOS GP must not be adjusted.



WARNING Lethal voltage of 230 V

- Severe burns, cardiovascular failure, fatal electric shock due to direct contact with live parts.
- Switch off the on-site transmitter voltage prior to working on the dosing pump.
- Check the electrical connections (mains cable) for damage.
- Do not operate the dosing pump if damage is detected.



1. Check that all lines are securely connected.
 - a Retighten the clamps if necessary.
2. Check that all contact connections are connected.
3. Establish the power supply – connect the mains plug.
4. Completely open a water withdrawal point downstream of the dosing point.
5. Check all connections and the entire dosing system for leaks.
6. Check the dosing pump for function.
7. Perform a test run.
8. Complete the start-up log in the separate operation log.

6.3 Handing over the product to the owner/operating company

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

6.3.1 Disposal of packaging

- ▶ Dispose of packaging material as soon as it is no longer needed (refer to chapter 11).

6.3.2 Storage of accessories and consumables

- ▶ Keep the supplied accessories in a safe place.
- ▶ Ensure that the necessary consumables are available or are re-ordered in time (refer to chapter 8.5).

7 Operation/handling



Refer to the operation manual of GENODOS pump GP, order no. 118 940.



In case of dosing pumps under seal (vp) in the drinking water sector, the pre-set dosing rate of **100 ml/m³** (at a counter-pressure of 5 bar) must not be adjusted.

The dosing capacity of the dosing pump is designed for 50 Hz.

In case of counter-pressures of < 1 bar (10 mWC) and in case of fluctuating counter-pressures, a pressure maintaining valve must be connected downstream in order to maintain the exact dosing rate.

7.1 Checking and documenting operation as intended



You as owner and proprietor have the duty to inform consumers about the treatment substances used in accordance with § 16 paragraph 4 of the German Drinking Water Ordinance (TrinkwV).

According to § 11, paragraph 1, sentence 1, you are obliged to record the treatment substances used and their concentrations in the drinking water at least once a week.

The obligation to keep records for non-adjustable Grünbeck dosing systems with the DVGW certificate together with ready-made exaliQ mineral solutions is fulfilled if proper operation is checked and documented weekly.

For the respective information sheets, go to the dosing technology section for the dosing system GENODOS DME on www.gruenbeck.de.

- ▶ Carry out a visual check for proper operation of the dosing system once a week.
- ▶ Document the visual check performed.

7.2 Change the canister



WARNING Leaking mineral solution

- Chemical burns on contact with the mineral solution
- Slipping, falling
- ▶ Use personal protective equipment.
- ▶ Look out for leaks and puddles on the floor and immediately wipe up leaking/dripping mineral solution with disposable towels.
- ▶ If necessary, wipe the areas with water and a damp cloth.

NOTE Do not fill empty canisters with mineral solution.

- Possible contamination of the mineral solution when transferring it from one canister to another.
- Non-compliance with hygiene requirements when filling empty canisters.
- Mixing of residual amounts of the mineral solution with fresh mineral solution.
- ▶ Replace an empty canister with a full factory-filled container.

NOTE Do not mix mineral solutions.

- Possible malfunction of the dosing system.
- ▶ Before using the mineral solution, check that it is the required mineral solution.

7.2.1 Requirement to change the canister

The canister must be changed when:

- When the shelf life of the mineral solution has expired.
- At the end of the recommended consumption period of 6 months after opening the canister, but after 12 months at the latest.
- As soon as the empty indicator (yellow LED) of the dosing pump lights up continuously.



An electronic level control switches the pump off when the canister is empty. Thus, the dosing pump is protected against running dry.

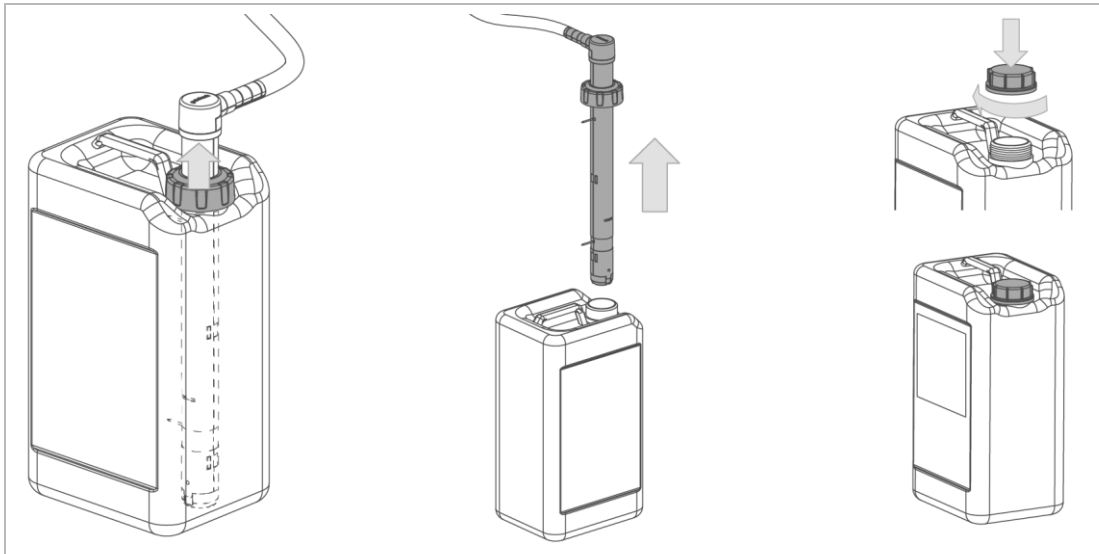
7.2.1.1 General procedure for replacing the canister

- ▶ Unplug the mains plug of the dosing system.
- ▶ Replace the empty canister with a full canister with the same mineral solution.

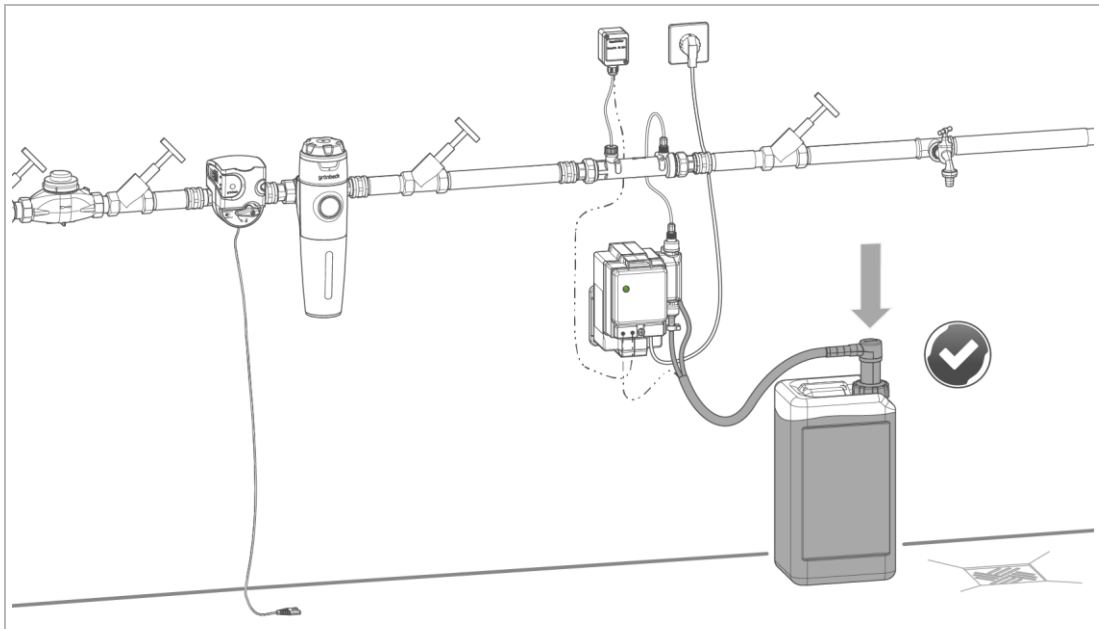
If no canister with mineral solution is available:

- ▶ Order a new exaliQ mineral solution from your dealer(refer to chapter 8.5).
- ▶ Plug the mains plug of the dosing system back in again after replacing the canister.

7.2.2 Replacing the canister



1. Release the sliding cover – pull upwards.
2. Pull the suction lance out upwards.
3. Pay attention to hygiene – do not touch the suction lance with your hand or place it on the floor.
4. Close the empty canister with the screw cap.



5. Vertically insert the suction lance into the full canister from above.
6. Fix the suction lance with the sliding cover.
 - » The dosing system is now ready for use.



An empty canister can be disposed of in an environmentally friendly manner.

8 Maintenance and repair

Maintenance and repair include the cleaning, inspection and servicing of the product.



The responsibility for inspection and maintenance is subject to local and national requirements. The owner/operating company is responsible for compliance with the prescribed maintenance and repair work.



By concluding a maintenance contract, you ensure that all maintenance work will be performed in due time.

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

8.1 Cleaning



Only allow cleaning work to be carried out by persons who have been instructed in the risks and dangers that can arise from the product.



WARNING Cleaning live components

- Risk of electric shock
- Sparking possible due to short circuit
- Switch off the voltage supply – as well as any external voltage – prior to starting the cleaning work.
- ▶ Do not use any high-pressure equipment for cleaning and do not blast electrical/electronic devices with water.

NOTE Do not clean the system with cleaning agents containing alcohol/solvents.

- These substances will damage plastic components.
- Varnished surfaces are affected.
- ▶ Use a mild/pH-neutral soap solution.
- ▶ Use personal protective equipment.
- ▶ Only clean the outside of the system.
- ▶ Do not use any strong or abrasive cleaning agents.
- ▶ Wipe the surfaces with a damp cloth.
- ▶ Dry the surfaces with a cloth.

8.1.1 Cleaning in case of leaked/clogged mineral solution



WARNING

Skin and eye contact with sodium hydroxide solution 5% – exaliQ neutra

- Chemical burns to the eyes and irritation of the skin and respiratory tract
- ▶ Use protective goggles, protective gloves and sturdy clothing.
- ▶ Comply with the safety data sheets and strictly follow the instructions.

- ▶ Absorb leaked mineral solution with suitable means – use a binding agent, if necessary.

- ▶ Clean the areas until completely dry.

8.2 Intervals



Faults can be detected in time by regular inspection and maintenance, and system failures can be avoided.

- ▶ As the owner/operating company, determine which components have to be inspected and maintained at which intervals (load-dependent). These intervals are subject to the actual conditions, e.g.: Water condition, degree of impurities, environmental influences, consumption, etc.

The interval table below shows the minimum intervals for the activities to be carried out.

Activity	Interval	Activities
Inspection	2 months	<ul style="list-style-type: none"> • Visually check the dosing pump and dosing hoses for leak tightness • Visually check the dosing system for leaks and function • Check the mineral solution for content and shelf life
Maintenance	6 months	<ul style="list-style-type: none"> • Check the dosing pump for function • Check the empty signal • Check the entire dosing system for leaks • Assess consumption of the dosing solution
	Annually	<ul style="list-style-type: none"> • Check the dosing pump for its condition and for leaks • Clean components that come into contact with chemicals (pump head, valves) and replace, if necessary • Check flow rates and dosing volumes • Check the function and condition of all system components (dosing point, suction lance, contact water meter, optional pressure maintaining valve) • Replace the dosing valve
Repair	5 years	<ul style="list-style-type: none"> • Recommendation: Replace wearing parts

8.3 Inspection

You, as owner/operating company, can carry out the regular inspections yourself. Initially, we recommend inspecting the system at shorter intervals and later on as required.

- ▶ Carry out an inspection at least every 2 months.
- 1. Visually check the dosing pump and the dosing hoses for leaks.
- 2. Check whether the dosing system is in operating mode and does not report any faults.
- 3. Check that the dosing system doses properly during water withdrawal.
 - » LED operation indicator is green and pump noise can be heard.
- 4. Visually inspect the entire dosing system for leakage.
- 5. Check the mineral solution for content and shelf life.

8.4 Maintenance

Regular work is necessary in order to ensure proper functioning of the product in the long term. DIN EN 806-5 recommends regular maintenance to ensure trouble-free and hygienic operation of the product.

8.4.1 Semi-annual maintenance

In order to carry out semi-annual maintenance, proceed as follows:

1. Check the dosing pump for function.
2. Check the entire dosing system for leaks.
3. Check that the dosing pump doses properly during water withdrawal.
4. Check the empty signal – pull the suction lance from the canister.
5. Assess consumption of the mineral solution in relation to the water consumed.

8.4.2 Annual maintenance



Annual maintenance work requires expert knowledge. The maintenance work may only be carried out by the technical service.

In addition to semi-annual maintenance, the work below must be carried out as well:

6. Change the dosing valve.
7. Check the flow volumes and dosing volumes and assess consumption (refer to chapter 8.4.3).

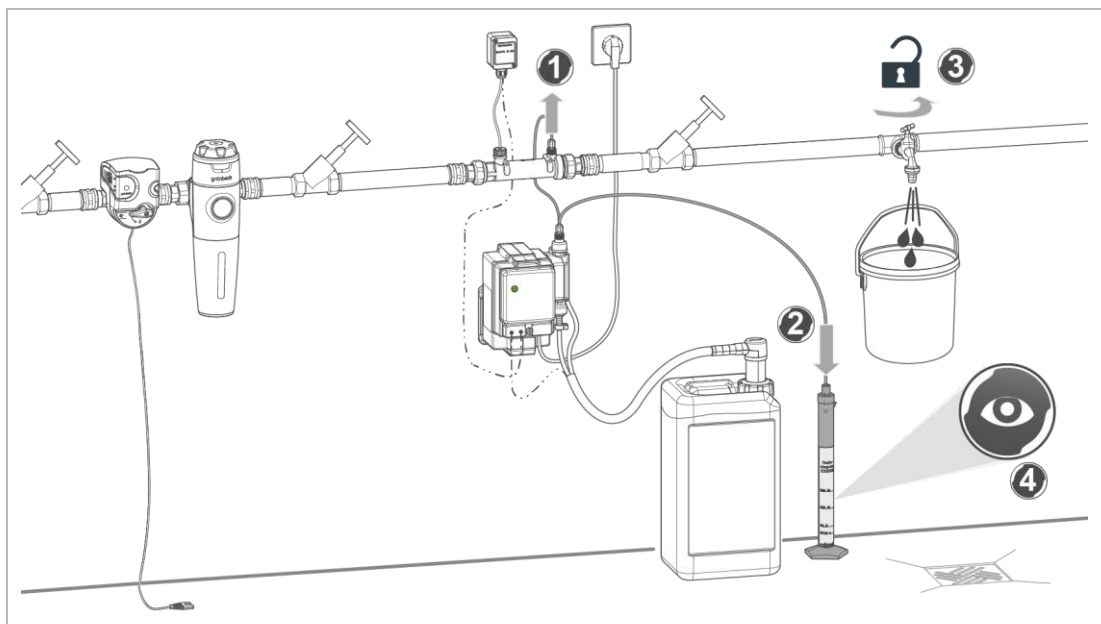
8. Clean the components that come into contact with chemicals (pump head, valves, suction and pressure membrane, seals).
 - a Replace worn components, if necessary.
9. Check the function and condition of all system components (dosing point, suction lance, contact water meter, optional pressure maintaining valve).
 - a Clean the injection point, if necessary.
 - b Replace the components, if necessary.
10. Carry out a wear test on safety-relevant components (refer to the operation manual of GENODOS pump GP).

8.4.3 Check dosing volume



For annual maintenance and/or in case of deviating consumption of the mineral solution, a dosing volume check must be carried out by gauging, e.g. a 15 lI canister is sufficient for drinking water treatment of approx. 150 m³

► Proceed as follows to check the dosing volume:



1. Remove the dosing hose at the injection point.
2. Put the dosing hose into a measuring beaker (or use a measuring cylinder with matching 5 bar test valve, order no. 115 630).
3. Remove a certain water volume, e.g. 100 l
4. Compare the ACTUAL value with the setpoint for the dosing volume:

Water volume	Dosing volume		
	min.	Setpoint pH value	max.
100 l	9 ml	10 ml	11 ml
50 l	4.5 ml	5 ml	5.5 ml

(Dosing volume is pre-set to 100 ml/m³ water treatment)

5. If the ACTUAL value is too low, carry out a wear test on components relevant for function (refer to the operation manual of the GENODOS pump GP).
6. If the ACTUAL value is too high, check all settings on the dosing system.

8.5 Consumables

Product	Order no.
Mineral solution in a 15 l canister (1x)	
exaliQ control	114 071
exaliQ safe	114 072
exaliQ safe+	114 073
exaliQ pure	114 074
exaliQ neutra	114 075
Mineral solution in a 60 l canister (1x)	
exaliQ control	114 081
exaliQ safe	114 082
exaliQ safe+	114 083
exaliQ pure	114 084
exaliQ neutra	114 085

8.6 Changing the mineral solution



Have a change of the dosing agent carried out by authorised and qualified personnel only.



If changing the mineral solution is necessary due to a change in the water quality or after rehabilitation, the dosing system must be flushed with drinking water that complies with the German Drinking Water Ordinance (TrinkwV).



WARNING Incorrect use of dosing agent

- Health hazard due to overdosing and/or wrong dosing agents in drinking water.
- ▶ In the drinking water sector, only and exclusively use dosing agents approved by Grünbeck.

NOTE

Change the mineral solution only after first flushing the dosing system.

- Mixing different mineral solutions can lead to the failure of the dosing system.
- Function failure/damage to the dosing system possible.
- ▶ Flush the dosing system according to the flushing instructions.

8.6.1 Flushing instructions

1. Put the suction lance into a container with drinking water that complies with the German Drinking water ordinance (TrinkwV).
 2. Flush until the water consumption of approx. 1 day has flown through.
 - » This corresponds to a consumption of flush solution of approx. 0.05 – 0.1 l (500 – 1000 l water consumption).
 - » The dosing system is flushed.
- ▶ Insert a new canister with new mineral solution.

8.6.2 Replacing components



Replacing the pump head, dosing hose and dosing valve guarantees that no residues of the old mineral solution remain in the dosing system.

Replacing the components is necessary in the exceptional cases below:

- Crystallisation/chemical reactions
- Dosing pump defective/sucking air

8.7 Spare parts

For an overview of the spare parts, refer to our spare parts catalogue at www.gruenbeck.com. You can obtain the spare parts from your local Grünbeck representative.

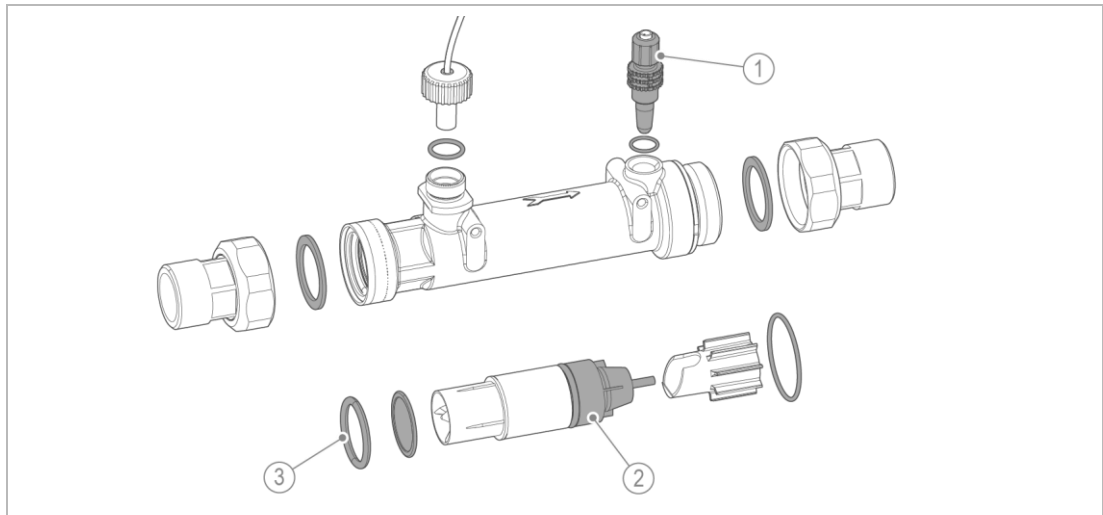
8.8 Wearing parts



Wearing parts are only allowed to be changed out by the technical service.

Wearing parts are listed below:

- All valves and membranes on the dosing pump (refer to the operation manual of the GENODOS pump GP)
- Optional components such as the pressure maintaining valve



Designation		Designation	
1	Dosing valve	3	All seals (e.g. O-rings)
2	Non-return valve		

9 Fault

9.1 Signals



In case of fault messages on the dosing pump – refer to chapter “Troubleshooting” in the operation manual of the GENODOS pump GP.

1. Eliminate the malfunction (refer to fault messages on the dosing pump).
2. Observe the signals of the control unit.
3. Acknowledge the fault message by unplugging the mains plug and plugging it back in again.

9.2 Observations

Observation	Explanation	Remedy
Dosing capacity drops	Leaks at the connection points	▶ Undo the hose at the relevant connection and cut off approx. 1 cm.
	Hose expanded too far	▶ Re-attach and secure the hose



If a fault cannot be rectified, further measures can be taken by the technical service.

- ▶ Contact technical service (for contact details, refer to inside cover sheet).

10 Decommissioning

If a longer standstill of the system is planned, the system must be decommissioned.

10.1 Temporary standstill

1. Flush the dosing system with clear water – without any mineral solution.
2. Disconnect the dosing pump from mains.
3. Leave the suction lance in the container filled with drinking water.

10.2 Restart

1. Connect the dosing pump to mains.
2. Put the dosing system into operation (refer to chapter 6).

10.3 Final shutdown

- ▶ Check whether shutting down the dosing systems has an effect on the functional integrity of your drinking water system.
- ▶ Have a qualified specialist dismantle the system components (refer to chapter 11.1).

11 Dismantling and disposal

11.1 Dismantling



The work described herein represents an intervention into your drinking water system.

► Have this work performed by qualified specialists only.

1. Flush the system with drinking water.
2. Disconnect the dosing pump from mains.
3. Close the raw water shut-off valve.
4. Open a water withdrawal point – wait a few seconds.
 - » The pressure in the system and the pipe network is being relieved.
5. Close the water withdrawal point.
6. Remove the suction hose and the canister containing the mineral solution.
7. Remove the dosing hose and the dosing valve.
8. Insert the blind plug into the contact water meter or remove the contact water meter and close the gap in your drinking water system, e.g. by using a fitting piece.
9. Remove the dosing pump.

11.2 Disposal

- ▶ Comply with the applicable national regulations.

Packaging

NOTE

Risk to the environment due to incorrect disposal

- Packaging materials are valuable raw materials and can be reused in many cases.
- Incorrect disposal can cause environmental hazards.
- ▶ Dispose of packaging material in an environmentally sound manner.
- ▶ Comply with locally applicable disposal regulations.
- ▶ If necessary, commission a specialist company with the disposal.

Mineral solution and canisters

- ▶ Obey the safety data sheet of the mineral solution.
- ▶ Rinse the empty canisters with a large amount of water.

Product



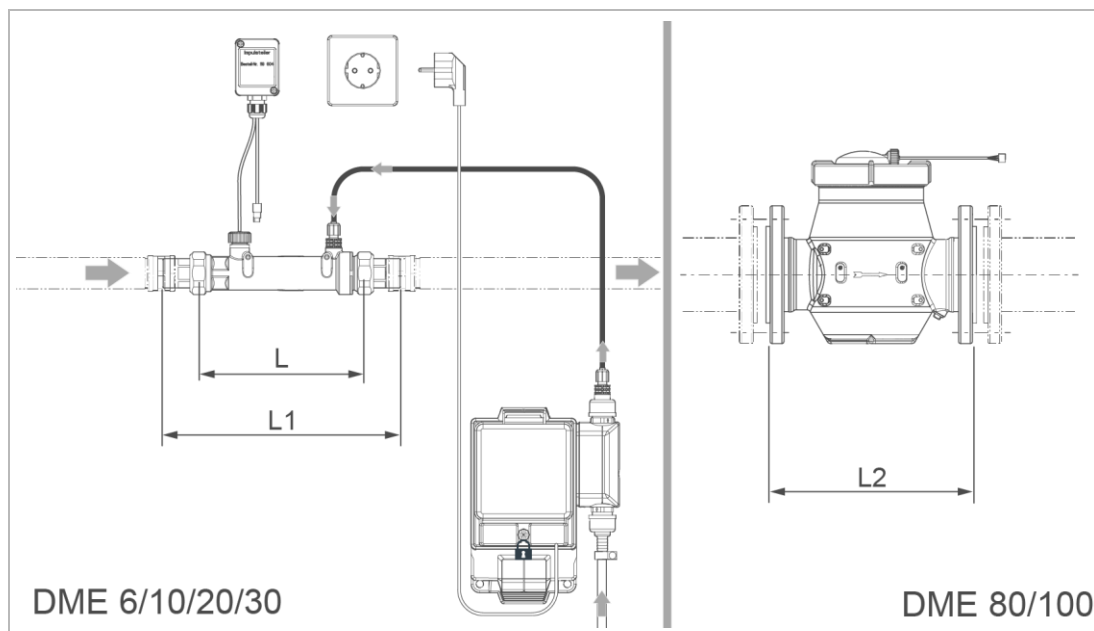
If this symbol (crossed-out wheellie bin) is on the product, this product or its electrical and electronic components must not be disposed of as household waste.

- ▶ Dispose of electrical and electronic products or components in an environmentally sound manner.
- ▶ 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.de.

12 Technical specifications



Dimensions and weights		DME 6	DME 10	DME 20	DME 30	DME 80	DME 100
Nominal connection diameter of water meter		DN 25 (1")	DN 32 (1¼")	DN 40 (1½")	DN 50 (2")	DN 80	DN 100
L	Installation length without screw connection	mm	190	190	190	240	–
L1	Installation length with screw connection	mm	276	280	312	356	–
L2	Installation length with flange connection	mm	–	–	–	310	310

GENODOS pump		DME 6	DME 10	DME 20	DME 30	DME 80	DME 100
GP (set and under seal)		1/40	2/40	6/40	6/40	10/40	10/40
Position Pulse division factor		T	1	2	2	1	1
Suction head (at a water temperature of 20 °C)		≤ 1.5 m WC					
Mains connection		V~/Hz					
Protection/protection class		IP54/⊕					

Performance data		DME 6	DME 10	DME 20	DME 30	DME 80	DME 100
Operating range		m³/h	0.04 – 6	0.04 – 10	0.05 – 20	0.1 – 30	0.1 – 100
Dosing sequence (GP pump)		l	1	2.5	4.7	6.7	11.4
Pulse sequence (water meter)		l/pulse	0.33	0.5	0.93	1.33	3.8
Nominal pressure		MPa/bar	1/10				
Operating pressure		MPa/bar	≤ 1/10	≤ 1/10	≤ 0.8/8	≤ 0.8/8	≤ 0.6/6
Pressure loss at nominal capacity		bar	0.5	0.8	0.8	0.8	0.6

Consumption data		DME 6	DME 10	DME 20	DME 30	DME 80	DME 100
exaliQ mineral solution (at a counter-pressure of 5 bar)	ml/m ³	100					
General data		DME 6	DME 10	DME 20	DME 30	DME 80	DME 100
Drinking water temperature	°C	≤ 25					
Water temperature	°C	5 – 30					
Ambient temperature		5 – 30					
Humidity (non-condensing)	%	≤ 90					
DVGW registration number		NW-9101CM0334					
ÜA registration number <i>The Office of the Vienna Provincial Government – City of Vienna</i>		R-15.2.3-21-17496					
Order no.		163 435	163 445	163 455	163 465	163 475	163 485

EU Declaration of Conformity

In accordance with the EU Low-Voltage Directive 2014/35/EU, Appendix IV



This is to certify that the system designated below meets the safety and health protection requirements of the applicable EU guidelines in terms of its design, construction and execution.

This certificate will become invalid if the system is modified in a way not approved by us.

Dosing system GENODOS

DME 6, DME 10, DME 20, DME 30, DME 80, DME 100

Serial no.: refer to the type plate

The aforementioned system also complies with the following directives and provisions:

- EMC (2014/30/EU)
- Directive on the Restriction of Hazardous Substances RoHS (2011/65/EU)

The following harmonised standards have been applied:

- EN 60335-2-51:2003
- EN 61000-6-1:2007
- EN 61000-6-2:2005
- EN 61000-6-3:2007+A1:2011
- EN 61000-6-4:2007+A1:2011

Responsible for documentation:

Mirjam Müller

Manufacturer:

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoechstädt; Germany

Hoechstädt, 10.08.2021

A handwritten signature in blue ink, appearing to be 'DL', is written over a light blue circular stamp.

ppa. Dietmar Ladenburger

Technical Director

Member of the Board of Management


Publisher's information


Technical documentation

If you have any questions or suggestions regarding this operation manual, please contact the Technical Documentation Department at Grünbeck

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