



**BECOME A  
WATER  
EXPERT!**

## **Residential Applications | Sanitary and Heating**

*General Catalogue*

grünbeck

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## Grünbeck water treatment – more than 70 years of experience



For more than 70 years now, Grünbeck Wasseraufbereitung has been one of the most renowned companies for water treatment in household, trade and industry in Europe. All around the globe, our customers trust in our expertise when it comes to ideal water qualities. The company's headquarters are located in the Bavarian city of Hoechstädt/Donau, approximately 100 km west of Munich, where all of Grünbeck's products are manufactured – high-class German workmanship with high standards of quality. We have a tight net of sales and service locations in Europe and thus not only ensure the proximity to our customers, but also have quick response times.

Grünbeck offers the entire spectrum of water treatment for drinking water installations and industrial applications. Our product range covers filtration, softening and corrosion protection up to disinfection and pure water generation. Furthermore, Grünbeck also is in the position to offer an ideal solution for the treatment of heating water.



### Grünbeck Forum

at headquarters in Hoechstädt, Germany

### General Catalogue | Residential Applications · Edition 1.0

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Subject to modifications and errors.

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# Treatment of drinking water

Our water works provide us with drinking water that can be enjoyed without further treatment. However, only 2 - 5 % of the water used in a household is for drinking or cooking. Bathing and showering, flushing the toilet, washing, etc. account for a larger part of the water we need. When heated, hard water precipitates scale, which settles in the pipes. This can lead to

clogging and energy losses and might damage fittings. The corrosion in pipes caused by aggressive water can have expensive consequences. Depending on the natural composition of the water and the intended usage, the water therefore has to be treated to prevent scaling and to protect against corrosion.

What do you need?	Dosing Systems exaliQ	Water Softeners softliQ
<b>Anti-scaling</b> for cold and warm water pipes		
<b>Soft water</b> <ul style="list-style-type: none"> <li>• savings in detergents</li> <li>• effective protection against scaling in showers &amp; at tap aerators</li> <li>• reliable protection against scaling in washing machines and kitchen appliances (e.g. coffee maker, tea maker, etc.)</li> </ul>		
<b>24-hour continuous operation</b>		
<b>Corrosion protection</b> for metal pipes		
Process	Dosing of minerals	Ion exchange



## The water filter as the first stage of water treatment

The water filter always serves as the basis and first stage of a water treatment system. Further planning or later measures for corrosion protection, prevention of scale deposits, water softening, nitrate/sulphate reduction, partial or full demineralisation of industrial water, deferrisation and demanganisation, etc. require the assistance of an expert for water treatment.

### TIP

**After the installation of a filter, Grünbeck also offers a complete filter service:**

- Expert consulting with on-site visits and assessments
- 5 year warranty for filters (2 years for FME/FM and MX/MXA)
- Water analyses
- Corresponding filter elements available for 20 years
- More than 70 years of Grünbeck know-how

**Therefore, always consider the experience and comprehensive service of an expert water treatment company when selecting a filter!**

### Reasons for installing a filter

**DIN EN 806-2, B.4:** "... At the beginning of the residential pipe system, filters as per DIN EN 13443-1 should be used... The entry of small solid particles such as rust particles or sand grains into the drinking water installation must be prevented. These particles can interfere with the proper functioning of, for example, drinking water heaters, shower heads, etc. or might induce corrosion damage in the pipes due to pitting. ..."

**DIN 1988-200, 12.1:** "... Aspects regarding the treatment of drinking water are included in DIN EN 806-2, appendix B (informative). If they are also stipulated in the present section, they – in combination with additional requirements in the present standard – shall obtain the status of normative regulations

### "Proper time for installing a filter

**DIN EN 806-4, 6.1.1:** "... The hot or cold water installation must only be filled with drinking water which does not contain any particles  $\geq 150 \mu\text{m}$  (e.g. removal by means of mechanical filters as per EN 13443-1). ..."

### Distinctive features

#### Filters which cannot be backwashed = replacement filters (fine filters, cartridge filters)

The filter element has to be replaced as needed (impurities and/or increased differential pressure). For hygienic reasons, the filter element (replacement element) must be replaced at least every six months (DIN EN 806-5, A).

**Advantage:** After the filter element has been replaced, the capacity is restored to a hundred per cent – "as new"! No special tools are required for the replacement of the filter element. Due to the follow-up business, the established contact with the end user can be maintained.

#### Filters which can be backwashed = backwash filters

During the backwash process, the filter elements are flushed with filtered drinking water. The particles collected in the filter are washed out of the system with the flushing water via an outlet. For hygienic reasons, a backwash must take place every 6 months at the latest (DIN EN 806-5, A).

**Advantage:** The filter element does not need to be replaced every six months.

Did you know? The optionally available pressure reducer of the pureiQ and BOXER X filters reliably controls the inlet pressure and thus reduces water hammer, flow noises as well as the risk of water damage. The value of the entire water installation is thus maintained.

Also refer to **DIN EN-806-2, 16.1:** "Pressure reducers are required ...

- if the static pressure at the withdrawal points is  $> 5 \text{ bar}$
- if the max. admissible operating pressure of fittings, devices, etc. is being exceeded."



pureliQ:	K			KD		
Point-of-entry filter to the house in smooth, organic design	✓			✓		
Nominal diameter [DN]	20	25	32	20	25	32
Nominal flow $\Delta p = 0.2$ bar [m³/h]	2.8	3.7	4.0	—		
$\Delta p = 0.5$ bar [m³/h]	4.5	6.0	6.3	—		
as per DIN EN 1567 [m³/h]	—			2.3	3.6	5.8
Pore size (as per DIN EN 13443-1) [µm]	100			100		
Nominal pressure	PN 16			PN 16		
Replaceable filter element	✓			✓		
Rotatable click-type connection flange	✓			✓		
UV protection with inspection window	✓			✓		
Pressure reducer with ergonomic hand wheel and pressure gauge (factory setting 4 bar)	—			✓		
Hose adapter	—			—		
Vortex backwash technology	—			—		
Flexible drain connection	—			—		
Automatic backwash with adjustable intervals	—			—		



Fine Filters  
Backwash Filters

R			RD			A			AD		
✓			✓			✓			✓		
20	25	32	20	25	32	20	25	32	20	25	32
3.2	4.2	5.0	—			3.2	4.2	5.0	—		
5.1	6.7	8.0	—			5.1	6.7	8.0	—		
—			2.3	3.6	5.8	—			2.3	3.6	5.8
100			100			100			100		
PN 16			PN 16			PN 16			PN 16		
—			—			—			—		
✓			✓			✓			✓		
✓			✓			✓			✓		
—			✓			—			✓		
✓			✓			—			—		
✓			✓			✓			✓		
✓			✓			✓			✓		
—			—			✓			✓		



Fine filter pureliQ:K



Fine filter pureliQ:KD



### Fine filter pureliQ:K

For the protection of residential water installations according to DIN EN 806-2.

Fine filter with pre-assembled components for installation in mere minutes. Convenient installation in all kinds of mounting situations and with almost no tools thanks to the rotatable click-type connection flange. Integrated interval indicator as timely reminder of the replacement of the filter element (DIN EN 806-5). Flow-optimised filter head made of high-strength plastic. Closed design to protect the filter element from UV radiation, including inspection window to determine the filter element's degree of pollution. Scope of supply includes water meter screw connections, filter element and filter cylinder that can be screwed on and off manually.



Your advantage:  
Extension of warranty  
by 12 months when you  
register your product

### Fine filter pureliQ:KD

For the protection of residential water installations according to DIN EN 806-2.

As above, however, including pressure reducer (noise-tested, group 1), continuously adjustable from 1 to 6 bar, outlet pressure indicator integrated in the filter head for shock-protection.

#### Specifications

- Nominal pressure PN 16
- Max. water temperature 30 °C
- Pore size according to DIN EN 13443-1: 0.1 mm (100 µm)
- Can also be retrofitted with a pore size of 50 µm, 20 µm and 5 µm

Fine filter pureliQ:K/KD	20	25	32
Connection diameter	¾"	1"	1¼"
Flow rate pureliQ:K, Δp = 0.2 bar [m³/h]	2.8	3.7	4.0
Δp = 0.5 bar [m³/h]	4.5	6.0	6.3
Flow rate pureliQ:KD, according to DIN EN 1567 [m³/h]	2.3	3.6	5.8
Installation length without screw connections [mm]	100	100	100
with screw connections [mm]	185	182	191
Overall height pureliQ:K [mm]	335	335	335
Overall height pureliQ:KD [mm]	355	355	355
Height required for replacement of filter elements [mm]	150	150	150
Order no. pureliQ:K (RG-A)	101 220	101 225	101 230
Order no. pureliQ:KD (RG-A)	101 270	101 275	101 290

• Accessories: For recommended replacement filter element 100 µm (order no.: 101 272e) and other sizes, please refer to page 19.  
For suitable adapter kits, please refer to page 18.



Backwash filter pureliQ:R



Backwash filter pureliQ:RD



Fine Filters  
Backwash Filters

## Backwash filter pureliQ:R

For the protection of residential water installations according to DIN EN 806-2.

Manually operated backwash filter with pre-assembled components for installation in mere minutes. Convenient installation in all kinds of mounting situations and with almost no tools thanks to the rotatable click-type connection flange. Integrated interval indicator as timely reminder of a required backwash (DIN EN 806-5). Anti-slip grip pads at the backwash hand wheel to ensure the convenient release of the backwash process even in case of high water pressure, closes automatically. Flexible drain connection as per DIN EN 1717 with integrated free outlet for precisely fitting installation and perfect tightness. Flow-optimised filter head made of high-strength plastic. Closed design to protect the filter element from UV radiation, including inspection window to determine the filter element's degree of pollution. Water meter screw connections and filter element (filter mesh made of stainless steel) included in the scope of supply. Hose adapter for a clean backwash even without drain connection.



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## Backwash filter pureliQ:RD

For the protection of residential water installations according to DIN EN 806-2.

As above, however, including pressure reducer (noise-tested, group 1), continuously adjustable from 1 to 6 bar, outlet pressure indicator integrated in the filter head for shock-protection.

### Specifications

- Nominal pressure PN 16
- Max. water temperature 30 °C
- Pore size according to DIN EN 13443-1: 0.1 mm (100 µm)
- Operating pressure 2.0 - 16.0 bar

Backwash filter pureliQ:R/RD	20	25	32
Connection diameter	¾"	1"	1¼"
Flow rate pureliQ:R, Δp = 0.2 bar [m³/h]	3.2	4.2	5.0
Δp = 0.5 bar [m³/h]	5.1	6.7	8.0
Flow rate pureliQ:RD, according to DIN EN 1567 [m³/h]	2.3	3.6	5.8
Installation length without screw connections [mm]	100	100	100
with screw connections [mm]	185	182	191
Overall height pureliQ:R [mm]	385	385	385
Overall height pureliQ:RD [mm]	405	405	405
Order no. pureliQ:R (RG-A)	101 320	101 325	101 330
Order no. pureliQ:RD (RG-A)	101 370	101 375	101 380

• Accessories: For drain connection DN 50 with siphon according to DIN 1717, please refer to page 39.  
For suitable adapter kits, please refer to page 18.



Automatic filter pureliQ:A



Automatic filter pureliQ:AD



### Automatic filter pureliQ:A

For the protection of residential water installations according to DIN EN 806-2.

Automatic backwash filter with pre-assembled components for installation in mere minutes. Convenient installation in all kinds of mounting situations and with almost no tools thanks to the rotatable click-type connection flange. Integrated interval indicator as timely reminder of a required maintenance (DIN EN 806-5). Flexible drain connection as per DIN EN 1717 with integrated free outlet for precisely fitting installation and perfect tightness. Flow-optimised filter head made of high-strength plastic. Closed design to protect the filter element from UV radiation, including inspection window to determine the filter element's degree of pollution. Water meter screw connections and filter element (filter mesh made of stainless steel) included in the scope of supply. Automatic backwash unit with LED display, 4 setting options (7, 30, 60 or 90 days) as well as manual release of backwash. Power supply via power supply plug, integrated protection against power failure.

### Automatic filter pureliQ:AD

For the protection of residential water installations according to DIN EN 806-2.

As above, however, including pressure reducer (noise-tested, group 1), continuously adjustable from 1 to 6 bar, outlet pressure indicator integrated in the filter head for shock-protection.

#### Specifications

- Nominal pressure PN 16
- Max. water temperature 30 °C
- Pore size according to DIN EN 13443-1: 0.1 mm (100 µm)
- Operating pressure 2.0 - 16.0 bar

Automatic filter pureliQ:A/AD	20	25	32
Connection diameter	¾"	1"	1¼"
Flow rate pureliQ:A, Δp = 0.2 bar [m³/h]	3.2	4.2	5.0
Δp = 0.5 bar [m³/h]	5.1	6.7	8.0
Flow rate pureliQ:AD, acc. to DIN EN 1567 [m³/h]	2.3	3.6	5.8
Installation length without screw connections [mm]	100	100	100
with screw connections [mm]	185	182	191
Overall height pureliQ:A [mm]	385	385	385
Overall height pureliQ:AD [mm]	405	405	405
Order no. pureliQ:A (RG-A)	101 420	101 425	101 430
Order no. pureliQ:AD (RG-A)	101 470	101 475	101 480

• Accessories: For drain connection DN 50 with siphon according to DIN 1717, please refer to page 39.  
For suitable adapter kits, please refer to page 18.



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Fine filter BOXER KX 1"



Fine filter BOXER KDX 1"



Fine Filters  
Backwash Filters

## Fine filter BOXER KX

For the protection of residential water installations according to DIN EN 806-2.

Flow-optimised fine filter made of high-strength industrial plastic, integrated 12-digit date indicator as timely reminder of the required replacement of the filter element (DIN EN 806-5), with transparent blue filter cylinder including rotatable connection flange for installation into horizontal or vertical pipes, including water meter screw connections and filter element, filter cylinder can be screwed on and off manually.

## Fine filter BOXER KDX

For the protection of residential water installations according to DIN EN 806-2.

As above, however, including pressure reducer (noise-tested, group 1), continuously adjustable from 1 to 6 bar, outlet pressure indicator integrated in the filter head for shock-protection.

### Specifications

- Nominal pressure PN 16
- Max. water temperature 30 °C
- Pore size according to DIN EN 13443-1: 0.1 mm (100 µm)
- Can also be retrofitted with a pore size of 80 µm, 50 µm, 20 µm and 5 µm

Fine filter BOXER KX/KDX [R]	¾"	1"	1¼"
Flow rate BOXER KX, $\Delta p = 0.2$ bar [m³/h]	2.8	3.7	4.0
$\Delta p = 0.5$ bar [m³/h]	4.5	6.0	6.3
Flow rate BOXER KDX, according to DIN EN 1567 [m³/h]	2.3	3.6	5.8
Installation length without screw connections [mm]	100	100	100
with screw connections [mm]	185	182	191
Overall height BOXER KX [mm]	260	260	260
Overall height BOXER KDX [mm]	277	277	277
Height for replacement of filter element [mm]	150	150	150
Order no. BOXER KX (RG-A)	101 830	101 835	101 840
Order no. BOXER KDX (RG-A)	101 815	101 820	101 825

• Accessories: For replacement filter elements, please refer to page 19.  
For suitable adapter kits, please refer to page 18.



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Backwash filter BOXER RX 1"



Backwash filter BOXER RDX 1"



Your advantage:  
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## Backwash filter BOXER RX

For the protection of residential water installations according to DIN EN 806-2.

Flow-optimised, manually operated backwash filter made of high-strength industrial plastic, integrated 12-digit date indicator as timely reminder of a required backwash (DIN EN 806-5), with transparent blue filter cylinder and backwash valve which is low on water hammer, including rotatable connection flange for installation into horizontal or vertical pipes, including water meter screw connections and filter element, filter mesh made of stainless steel, outer filter cylinder can be screwed on and off manually, ergonomic handle for easy release of backwash even in case of high water pressure. Flexible drain connection according to DIN EN 1717 with integrated free outlet for perfect tightness.

## Backwash filter BOXER RDX

For the protection of residential water installations according to DIN EN 806-2.

As above, however, including pressure reducer (noise-tested, group 1), continuously adjustable from 1 to 6 bar, outlet pressure indicator integrated in the filter head for shock-protection.

### Specifications

- Nominal pressure PN 16
- Max. water temperature 30 °C
- Pore size according to DIN EN 13443-1: 0.1 mm (100 µm)
- Operating pressure 2.0 - 16.0 bar

Backwash filter BOXER RX/RDX [R]	3/4"	1"	1 1/4"
Flow rate BOXER RX, $\Delta p = 0.2 \text{ bar}$ [m³/h]	2.9	3.8	4.2
$\Delta p = 0.5 \text{ bar}$ [m³/h]	4.7	5.9	6.7
Flow rate BOXER RDX, according to DIN EN 1567 [m³/h]	2.3	3.6	5.8
Installation length without screw connections [mm]	100	100	100
with screw connections [mm]	185	182	191
Overall height incl. outlet funnel DN 40 BOXER RX [mm]	315	315	315
Overall height incl. outlet funnel DN 40 BOXER RDX [mm]	330	330	330
Order no. BOXER RX (RG-A)	101 510	101 515	101 520
Order no. BOXER RDX (RG-A)	101 525	101 530	101 535

• Accessories: For drain connection DN 50 with siphon according to DIN 1717, please refer to page 39.  
For suitable adapter kits, please refer to page 18.



Fine filter BOXER KDX 2<sup>1</sup>

Backwash filter BOXER RDX 2<sup>1</sup>

Fine Filters  
Backwash Filters

## Fine and backwash filters BOXER X 1½" and 2"

For use in the commercial and industrial sector as well as in large buildings to protect the drinking water system according to DIN EN 806-2.

Available in variants fine filter KX and backwash filter RX. Optionally available with pressure reducer in variants KDX and RDX for continuous adjustment of the max. admissible operating pressure (DIN EN 806-2). Reduces water hammer and flow noises. Pre-assembled, rotatable connection flange made of plastic including water meter screw connections for quick installation into the pipe in any flow direction and in only a few easy steps. Can be fastened by way of pre-assembled locking screws. Including pressure gauge to conveniently read off the operating pressure. Integrated 12-digit date indicator as timely reminder of the next maintenance date for backwash/replacement of the filter element according to DIN EN 806-5.



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### Fine filter KX/KDX

Fine filter KX/KDX with replaceable filter element in standard version 100 µm. Special pore sizes of 50 µm and 5 µm for trade and industry can be retrofitted. Transparent blue filter cylinder that can be tightened by hand.

### Backwash filter RX/RDX

Backwash filter RX/RDX with 100 µm filter element made of stainless steel. Optimised backwash technology with impeller for effective filter cleaning. Ergonomic handle for easy release of backwash. Flexible drain outlet DN 50 according to DIN EN 1717 for precise fit and tightness with integrated free outlet.

	Fine filter KX/KDX		Backwash filter RX/RDX	
Connection diameter [R]	1½"	2"	1½"	2"
Flow rate BOXER KX/RX				
Without pressure reducer, Δp = 0.2 bar [m³/h]	10.6	12.0	8.6	9.2
Δp = 0.5 bar [m³/h]	17.0	19.2	13.3	14.6
Flow rate BOXER KDX/RDX				
with pressure reducer, acc. to DIN EN 1567 [m³/h]	9.1	14.0	9.1	14.0
Installation length without screw connections [mm]	160	160	160	160
with screw connections [mm]	283	277	283	277
Overall height BOXER² [mm]	509	509	488	488
Height for replacement of filter elements [mm]	> 390	> 390	–	–
Order no. BOXER X without pressure reducer (RG-A)	101845000000	101885000000	101540000000	101545000000
Order no. BOXER X with pressure reducer (RG-A)	101890000000	101895000000	101580000000	101585000000

· Accessories: For drain connection DN 50 with siphon according to DIN 1717 for BOXER RX/RDX, please refer to page 39, for replacement filter elements for BOXER KX/KDX, please refer to page 19. For suitable adapter kits for replacement of existing filters, refer to page 18.

<sup>1</sup> DVGW certification pending

<sup>2</sup> Overall height BOXER RX/RDX incl. outlet funnel DN 50



GENO-backwash filter MX with screw connections



GENO-backwash filter MXA with screw connections

### GENO-backwash filter MX

Manually backwashable protection filter according to DIN EN 806-2 for filtration of drinking water. Particularly suited for trade and industry as well as for large residential buildings. All parts coming into contact with the medium are made of brass or high-grade industrial plastic. Modular filter element made of high-grade industrial plastic with stainless steel filter mesh, brushes for supplementary mechanical cleaning of the filter element during backwash, including backwash water connection to clamp HT pipe DN 50, two pressure gauges.

#### Specifications

- Nominal pressure PN 16
- Drain connection DN 50
- Max. water temperature 90 °C
- Pore size according to DIN EN 13443-1: 0.1 mm (100 µm)
- Power supply 230 V, 50 Hz (MXA)

GENO-backwash filter MX/MXA [R]	1"	1¼"	1½"	2"
Flow rate, $\Delta p = 0.2 \text{ bar}$ [m³/h]	8.5	12.0	22.0	27.0
$\Delta p = 0.5 \text{ bar}$ [m³/h]	13.0	18.5	30.0	38.5
$K_v$ value [m³/h]	18	25	46	56
Installation length without screw connections [mm]	190	190	206	206
with screw connections [mm]	276	281	342	323
Order no. MX (RG-A)	107 400	107 405	107 410	107 415
Order no. MXA (RG-A)	107 450	107 455	107 460	107 465

#### GENO-backwash filter MX Extra charge for versions with modified pore size

Order no.	Version	Designation	Filter type 1" - 1¼"	Filter type 1½" - 2"	Filter type DN 65	Filter type DN 80 - 100
Example			(RG-A)	(RG-A)	(RG-B)	(RG-B)
107 4xx	.11	50 µm filter				
	.21	200 µm filter				
	.31	500 µm filter				

Available at extra cost. Please inquire.

· Please indicate the version number when ordering.



GENO-backwash filter MX with flange connection  
(according to DIN EN 1092-1)



GENO-backwash filter MXA with flange connection  
(according to DIN EN 1092-1)

Fine Filters  
Backwash Filters

GENO-backwash filter MX/MXA [DN]	65	80	100
Flow rate, $\Delta p = 0.2$ bar [m <sup>3</sup> /h]	30	60	60
$\Delta p = 0.5$ bar [m <sup>3</sup> /h]	47	96.5	98
K <sub>v</sub> value [m <sup>3</sup> /h]	69	124	138
Installation length without counter-flanges [mm]	220	250	250
Order no. MX (RG-B)	107 420	107 425	107 430
Order no. MXA (RG-B)	107 470	107 475	107 480

**GENO-backwash filter MXA** Extra charge for versions with/without safety device (solenoid valve to interrupt the backwash in case of power failure)

Order no.	Version	Designation	Filter type 1" - 1¼"	Filter type 1½" - 2"	Filter type DN 65	Filter type DN 80 - 100
<b>Example</b>			<b>(RG-A)</b>	<b>(RG-A)</b>	<b>(RG-B)</b>	<b>(RG-B)</b>
107 4xx	.011	100 µm filter	with safety device			
	.110	50 µm filter	without safety device			
	.111	50 µm filter	with safety device			
	.210	200 µm filter	without safety device			
	.211	200 µm filter	with safety device			
	.310	500 µm filter	without safety device			
	.311	500 µm filter	with safety device			

Available at extra cost. Please inquire.

Please indicate the version number when ordering.



GENO-fine filter FME



GENO-fine filter FM

### GENO-fine filter FME/FM

**Stainless steel version, for commercial and industrial applications, from DN 50 - DN 200.**

Protection filter with several filter elements and stainless steel housing. User-friendly cover fastener, draining valve, venting, pressure gauges for raw and pure water, with initial equipment of filter elements 100 µm.

FME = pure stainless steel made of 1.4404 (DN 50, 65, 80, 100)

FM = inside and outside plastic-coated (DN 150, 200)

### GENO-fine filter FME/FM-WW

Identical to FME/FM, but hot water-resistant, for temperatures up to 90 °C at 6 bar.

### GENO-fine filter FME/FM-KW

Identical to FME/FM-WW, but with 500 µm stainless steel filter elements for cooling water and other special applications.

#### Specifications

- Nominal pressure PN 10 (PN 6 for the FME/FM-WW version), flange type as per DIN 1092-1
- Max. water temperature 30 °C (90 °C for the FME/FM-WW and FME/FM-KW version)
- Also available with a pore size of 5 µm, 50 µm, 80 µm and 500 µm – please inquire (for an overview, please refer to page 19)

GENO-fine filter	FME				FM	
[DN]	50	65	80	100	150	200
Flow rate, $\Delta p = 0.2$ bar [m³/h]	30	40	50	70	150	280
Installation length [mm]	360	360	360	484	690	690
Filter elements [pcs]	2	2	3	5	14	14 x 2 <sup>1</sup>
Empty weight [kg]	22	23	23.5	32.5	100	124
<b>Order no. FME/FM (RG-B)</b>	<b>102 190</b>	<b>102 290</b>	<b>102 390</b>	<b>102 490</b>	<b>102 400</b>	<b>102 500</b>
<b>Order no. FME/FM-WW<sup>2</sup> (RG-B)</b>	<b>102 185</b>	<b>102 285</b>	<b>102 385</b>	<b>102 485</b>	<b>102 401</b>	<b>102 501</b>
<b>Order no. FME/FM-KW<sup>3</sup> (RG-B)</b>	<b>102 195</b>	<b>102 295</b>	<b>102 395</b>	<b>102 495</b>	<b>102 470</b>	<b>102 570</b>

<sup>1</sup> For FM-KW 200, only order the pack of 14 filter elements once. <sup>2</sup> Hot water <sup>3</sup> Cooling water

### Accessories for cartridge and backwash filters

For connection of a visual and/or acoustic remote indicator to a building management system for required filter maintenance.

	Order no. (RG-B)
Differential pressure switch	102 870
Hose extension kit for FM 150 - 200, 500 mm	102 850

• **Accessories: For replacement filter elements, please refer to page 19.**



Fine Filters  
Backwash Filters

Seal kits

## Accessories

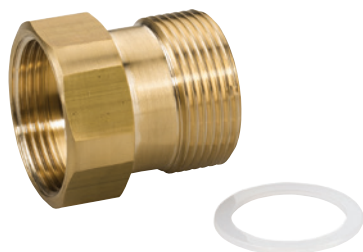
Seal kit, suitable for filter type	PU	Order no. (RG-I)
Fine filter FS 1"	3 sets	100 001
Fine filter FS 1¼" - 2"	3 sets	100 002
Fine filter FS-B 1½" + 2"	1 set	101 639e
Fine filter pureliQ/BOXER/FS-B 1" + 1¼"	1 set	101 641e
KOMBI-filter GENO-pur	1 set	108 601
KOMBI-backwash filter GENO-jet/ASTRO	1 set	108 614
KOMBI-fine filter FSV	2 sets	107 660

Tools for filters	Order no. (RG-B)
Belt wrench for all filters up to R 2"	105 805
Spigot wrench for pressure reducers (SW 48) suitable for BOXER X ¾" - 1¼" and pureliQ ¾" - 1¼"	104 805
Spigot wrench for pressure reducers (SW 70) suitable for BOXER X 1½" - 2"	104000010001

## Pressure gauges

For indication of operating pressure (0 - 10 bar) with brass insert for inlet or outlet side. Sizes 1" and 1¼" suitable for filter series **pureliQ** and **BOXER X**. Sizes 1½" and 2" suitable for GENO-fine filter **FS-B** and backwash filter **KICKER**.

Pressure gauges suitable for pureliQ and BOXER X filters	Order no. (RG-B)
Pressure gauge to indicate operating pressure 1"	100 860
Pressure gauge to indicate operating pressure 1¼"	100 865
Pressure gauges suitable for BOXER X 1½" - 2"	
Pressure gauge to indicate operating pressure 1½"	100 870
Pressure gauge to indicate operating pressure 2"	100 875



Adapter kit



Adjusting piece 1"

Adapter kits for the replacement of an older Grünbeck filter by a new Grünbeck filter	Extended by [mm]	Order no. (RG-B)
Adapter kit from FS 1" to pureliQ 1", BOXER 1"	37	101 647e
Adapter kit from FS 1¼" to pureliQ 1¼", BOXER 1¼"	103	101 852
Adapter kit from FS 1½" to BOXER X 1½"	42	101 651e
Adapter kit from FS 2" to BOXER X 2"	46	101 652e
Adapter kit KOMBI ¾" from <sup>1</sup> to pureliQ ¾", BOXER ¾"	10	101 862
Adapter kit KOMBI 1" from <sup>1</sup> to pureliQ 1", BOXER 1"	10	101 646e
Adapter kit KOMBI 1¼" from <sup>1</sup> to pureliQ 1¼", BOXER 1¼"	10	101 864
Adapter kit KOMBI (V1) 1" from <sup>2</sup> to pureliQ 1", BOXER 1"	50	101 865
Adapter kit KOMBI (V1) 1¼" from <sup>2</sup> to pureliQ 1¼", BOXER 1¼"	50	101 866
Adapter kit from MS DN 80 to MX/MXA (A) DN 80	80	106 804e
Adapter kit from MS DN 100 to MX/MXA (A) DN 100	80	106 805e

<sup>1</sup> Kombi connection flange for filter series GENO-pur, GENO-PS, GB, ASTRO, GENO-FSV

<sup>2</sup> Kombi connection flange (V1) with pressure reducer for filter series GBS, ASTRO, GB-D, GENO-FSV, GENO-PS-D

· For additional adapter kits, please inquire.

System separators	Extended by [mm]	Order no. (RG-B)
Adapter kit from DK-standard ½" to DK 2	87	132 870
Adapter kit from DK-standard ¾" to DK 2	87	132 875
Adapter kit from DK-standard 1" to DK 2	103	132 880
Adapter kit from DK-standard 1¼" to DK 2	103	132 885
Adapter kit from DK-standard 1½" to DK 2	16	132 890
Adapter kit from DK-standard 2" to DK 2	16	132 895

· For additional adapter kits, please inquire.

## Adjusting pieces

For installation downstream of the point-of-entry filter to the house, e.g. to integrate a water softener.

Adjusting pieces	Order no. (RG-B)
Adjusting piece 1" (installation length without screw connection 190 mm) suitable for softliQ:SD, softliQ:PB20, safeliQ:EB30, softliQ:MD32, softliQ:MD12i	128 001
Adjusting piece 1¼" (installation length without screw connection 190 mm) suitable for softliQ:MD38	128 401

Size of filter element →	(-)	(1)	(1)	(3)	(1)	(3)	(1)	(2)	(3)	(1)	(1)	(-)	(6)	(2)	(1)	(5)	(5)	(1)	(2)	(3)	(3)	(4)			
Suitable for filter type →	pureIQ:K/KD	BOXER KX/KDX ¾" - 1¼"	BOXER K/KD ¾" - 1¼"	BOXER KX/KDX 1½" and 2"	FS-B 1" and 1¼"	FS-B 1½" and 2"	FS 1"	FS 1¼" and 1½"	FS 2"	GENO-pur/GENO-KOMBI GB	GENO-KOMBI FSV	GBS	GN ¾", 1", 1½"	GN 1¼" and 2"	S ¾" (up to year of constr. 1978)	S 1" (up to year of constr. 1978)	S 1" WW (up to year of constr. 1990)	S 1" WW-K (up to year of constr. 1990)	S 1½"	S 1½" and 2"	FME/FM 50 - 150'	FM 200 <sup>1</sup>	Order no.	Packing unit [pcs]	RG-
WITH protective cylinder and cylinder seal																									
80 µm							•				•												103 007	2	I
80 µm								•															103 008	2	I
80 µm									•														103 009	2	I
50 µm							•				•												103 001	2	I
50 µm								•															103 002	2	I
50 µm									•														103 003	2	I
20 µm							•				•												103 067	2	I
5 µm							•				•												103 061	2	I
5 µm								•															103 062	2	I
5 µm									•														103 063	2	I
WITHOUT protective cylinder																									
100 µm	•	•																					101 272e	2	A
100 µm												•											100 651	2	I
100 µm				•																			103000010001	2	A
100 µm																				•			103000020001	2	A
100 µm																					•		103000030001	28	A
80 µm			•		•		•			•	•				•			•					103 075	2	I
80 µm								•											•				103 076	2	I
80 µm				•		•			•											•	•		103 077	2	I
50 µm	•	•	•		•		•			•	•				•			•					103 068	2	I
50 µm								•						•					•				103 069	2	I
50 µm				•		•			•											•	•		103 070	2	I
50 µm																•	•						103 044	2	I
50 µm													•										103 100	2	I
50 µm																					•		103 153	28	I
20 µm	•	•	•		•		•			•	•												103 071	2	I
5 µm	•	•	•		•		•			•	•				•			•					103 081	2	I
5 µm								•											•				103 082	2	I
5 µm				•		•			•											•	•		103 083	2	I
500 µm																				•	•		103 111	2	I
500 µm																						•	103 151	14	I

<sup>1</sup> Note: Please take into consideration the quantities required for the different sizes of the GENO-line filters FME/FM, refer to page 16.

· According to DIN EN 13443-1, filter elements of 5, 20, 50 and 500 µm are not admissible for drinking water installations. They are suitable for trade and industry, however.

Fine Filters  
Backwash Filters



**BECOME A  
WATER  
EXPERT!**

# Safety devices

## Optimum protection against water damage

Uncontrolled water leakages cause enormous costs in damage. Installing or retrofitting a safety fitting provides reliable protection. The **protectliQ** safety fitting monitors the installation site by means of a wired sensor. It detects impending damage and shuts off the water pipe.

In order to monitor an additional room, a second wired water sensor can be connected. The easy-to-install safety device is used as a pipe fitting. The **protectliQ** is suitable for installation next to a filter of the **pureliQ** filter series or any other filter in Grünbeck's product range. As it is operated by batteries, reliable monitoring is also ensured in case of a power failure.

*Installation situation protectliQ:A  
with pureliQ:AD*





Safety device protectliQ:A



**Your advantage:**  
Extension of warranty  
by 12 months when you  
register your product

### protectliQ safety device

Grünbeck's safety device **protectliQ** is a stand-alone safety device. It conveniently provides maximum protection against water damage for buildings and appliances without major maintenance efforts.

The **protectliQ** can either be installed in horizontal or vertical pipes and can be equipped with up to two wired sensors.

The **protectliQ** is easy to operate via one single button. Power is supplied via customary AA batteries, a power connection is not required. By means of an optional power unit, the service life of the batteries can be prolonged considerably. The valve is a long-life ball valve which can also be operated manually at any time.

### Specifications

- Nominal pressure PN 16
- Optional 5 V plug-in power supply unit
- Batteries 4 x Mignon AA
- Conductivity of leakage water min. 20 µS/cm
- Water sensor with cable of 2 m in length

Safety device protectliQ:A	20	25	32	40
Connection diameter	¾"	1"	1¼"	1½"
Nominal connection diameter [DN]	20	25	32	40
Installation length with screw connection [mm]	165	152	251	283
without screw connection [mm]	70	70	160	160
Nominal flow [m³/h]	6.5	8.0	9.0	12.0
Pressure loss at nominal flow [bar]	0.1	0.1	0.2	0.3
<b>Order no. (RG-A)</b>	<b>126 400</b>	<b>126 405</b>	<b>126 410</b>	<b>126 415</b>

Accessories	Order no. (RG-A)
Power supply plug	126 802
Water sensor with 2 m cable	126 805
Water sensor with 10 m cable	126 815

# Safety devices

		Liquid category				
	Safety device	1	2	3	4	5
AA	Unobstructed free outlet	✓	✓	✓	✓	✓
AB	Free outlet with non-circular overflow (without restrictions), e.g. system separation device GENO-G5	✓	✓	✓	✓	✓
BA	System separators with controllable intermediate pressure zone, e.g. Euro system separator GENO-DK 2, filling section thermalIQ:FB2	✓	✓	✓	✓	
HD	Pipe aerator for hose connections, combined with non-return valve (safety combination)	✓	✓	✓		
EA	Controllable non-return valve	✓	✓			

Safety devices prevent the drinking water from being polluted due to backflow. They must not be mixed up with safety fittings such as safety valves.

**Backflow can occur for the following reasons:**

- a) Back siphonage due to low pressure  
(pressure loss in the public water supply network)
- b) Back pressure: due to counter-pressure  
(higher pressure than in the public water supply network)

Modified drinking water or liquids coming into contact with drinking water are classified into five categories. The higher the category, the higher the hazard and the stricter the measures that must be taken against backflow (safety devices).

**Category 1:** Cold drinking water

**Category 2:** Modified drinking water without any health risks,  
e.g. warm drinking water

**Category 3:** Health risks caused by toxic substances,  
e.g. heating water without additives

**Category 4:** Health risks caused by highly toxic, radioactive or carcinogenic substances, e.g. heating water with additives

**Category 5:** Health risks caused by microbiology,  
e.g. water originating from body care



*Euro system separator GENO-DK 2-Mini*



*Euro system separator GENO-DK 2*

System separators according to BA design of DIN EN 12729. They can protect facilities and systems which endanger the drinking water according to DIN EN 1717 and up to danger class 4. They replace pipe separators EA 1 and EA 2.

The units operate on the basis of the 3-chamber principle, using an upstream, intermediate and downstream pressure zone. In case of relief, the intermediate pressure zone is unpressurised and opened to the atmosphere.

System separators of BA design may only be installed in combination with accessory fittings according to DIN EN 1717 in order to represent so-called safety devices. Seen in flow direction, the safety device consists of a shut-off valve, a dirt trap (**we recommend a fine filter – refer to the present catalogue, starting page 6**), the system separator itself and an additional shut-off valve.

### Euro system separator GENO-DK 2

System separator made of brass up to type R 1¼" and of red brass from type R 1½". Suitable for operating temperatures up to 65 °C at PN 10, with water inlet and outlet connecting pieces, water meter screw connections made of brass with seals, integrated non-return valve and dripping water connection. Includes three connection points for test pressure gauges.

### Euro system separator GENO-DK 2-Mini

System separator made of brass, suitable for operating temperatures up to 65 °C at PN 10, with water inlet and outlet connecting pieces, water meter screw connections made of brass, with seals and a prefilter, integrated non-return valve and dripping water connection. Particularly favourable installation dimensions and reductions from ½" female thread to ¾" male thread, three connection points for test pressure gauges for maintenance according to DIN EN 806-5.

GENO-DK 2 [R]	½"	¾"	1"	1¼"	1½"	2"	DK 2-Mini
Nominal connection diameter [DN]	15	20	25	32	40	50	15/20
Recommended max. flow [m³/h]	1.9	3.3	5.2	7.2	13.5	21.0	1.4
K <sub>v</sub> value Δp = 1.0 bar [m³/h]	3.5	4.5	7.6	9.4	22.2	32.5	2.0
Installation length							
without screw connection [mm]	153	153	187	187	274	274	83
with screw connection [mm]	227	227	280	280	387	395	130/150
Min. distance to wall [mm]	60	60	70	70	90	90	35
Overall height with outlet funnel [mm]	263	263	292	292	382	382	127
Operating weight, approx. [kg]	3.4	3.4	5.2	5.2	12.5	13.6	1.2
Order no. (RG-A)	132 510	132 520	132 530	132 540	132 560	132 570	133 100



Euro system separator GENO-DK 2-Maxi



Euro system separator GENO-DK-Maxi

Safety Devices  
Dosing Technology

## Euro system separator GENO-DK 2-Maxi/DK-Maxi

System separator made of red brass with flange connections (DIN EN 1092-1) for horizontal installation, two non-return valves and dripping water connection, as well as three test connection pieces (DVGW-certified up to and including DN 100).

	GENO-DK 2-Maxi				GENO-DK-Maxi		
Series	50	65	80	100	150	200	250
Nominal connection diameter [DN]	50	65	80	100	150	200	250
Housing material	Red bronze	Red bronze	Red bronze	Red bronze	Sphero-cast coated	Sphero-cast coated	Sphero-cast coated
Recommended max. flow [m³/h]	25	35	50	80	227	363	523
K <sub>v</sub> value Δp = 1.0 bar [m³/h]	42	55	88	122	227	363	523
Max. water temperature [°C]	65	65	65	65	60	60	60
Min. flow pressure [bar]	1	1	1	1	1	1	1
Nominal pressure PN [bar]	10	10	10	10	10	10	10
Installation length without counter-flanges [mm]	302	305	470	470	600	780	930
Min. distance to wall [mm]	140	150	150	160	200	240	270
Overall height with outlet funnel [mm]	382	385	484	484	839	922	922
Empty weight, approx. [kg]	13.2	17.0	26.5	28.0	103	111	142
Operating weight, approx. [kg]	16.0	19.8	33.1	34.2	123	150	201
Order no. (RG-B)	132 460	132 465	132 470	132 475	132 720	132 725	132 730

## Service kit for Euro system separators

Suitable for all types and for compulsory pressure zone inspection according to DIN EN 12729 and maintenance according to DIN EN 806-5.

	Order no. (RG-B)
Service kit for Euro system separators	132 095



*Euro system separation device GENO-G5*

## Euro system separation device GENO-G5

The Euro system separation device **GENO-G5** is a safety device to protect the drinking water network against liquids up to and including liquid category (danger class) 5, according to DIN EN 1717. The system is suited in particular for the dental sector to supply dental treatment units. In addition, we recommend the installation of the optional rinsing device. Furthermore, we suggest installing a **GENODOS DM-B** dosing system downstream of the Euro system separation device for automatic disinfection.

**The system separation device is a compact device, ready for connection, mounted on an aluminium profile rack with adjustable feet, completely piped and wired for connection, mainly consisting of:**

Free outlet (DIN EN 13077, family A, type B, DN 20), consisting of supply tank including make-up water feed and overflow, pressure booster system, consisting of: pump with frequency-controlled pressure regulation, dry-run protection, fault alarm output, non-return valve, pressure gauge, pressure sensor, flow restrictor, pressurised expansion tank, sampling valve with waste water discharge as well as set-up for optional rinsing device, water inlet and outlet with shut-off fittings, draining valve at the supply tank, DIN-compatible waste water outlet HT-DN 50 with waterless odour and vermin barrier, for direct connection to drain on site.

<b>Euro system separation device GENO-G5 [R]</b>	<b>3/4"</b>
Nominal connection diameter [DN]	20
Nominal capacity [m³/h]	2.0
Pressure control [bar]	4 (adjustable from 2.5 - 4)
Power supply [V/Hz/kW]	230/50/1.1
<b>Order no. (RG-B)</b>	<b>134 100</b>

## Accessories

Rinsing unit for **GENO-G5** that washes the stagnant water to the drain when power is switched on again (main switch of the dental office is switched on) after periods of standstill such as during the night, weekend or vacation. Optional connection kit, consisting of 2 corrugated stainless steel hoses (800 mm) including seals and connecting pieces.

	<b>Order no. (RG-B)</b>
Rinsing unit for GENO-G5	<b>134 805</b>
Connection kit for GENO-G5	<b>134 810</b>

# Dosing technology

## Exact dosing for the protection of your drinking water pipes

In combination with the **exaliQ mineral solutions**, Grünbeck's new **exaliQ dosing systems** protect your pipe system and maintain the value of your home.

Dosing mineral substances (phosphates and silicates) into your drinking water prevents corrosion damage in the pipes due to the formation of a protective layer on the inside of the pipe. The natural mineral substances can also prevent the precipitation of scale. For the safety you deserve! Subject to the respective application, the new **exaliQ mineral solutions** were ideally tailored to your requirements. The focus is on installations made of steel, copper and brass, but also on special applications. By means of the proven **GENODOS DME** dosing systems, water pipes in industrial and commercial buildings in which high flow rates and water withdrawals prevail, can be protected as well.

Dosing system  
exaliQ:KC6





Dosing system exaliQ:KC6, compact system



Dosing system exaliQ:SC6, system with suction lance



## exaliQ dosing systems

Volume-based dosing of exaliQ mineral solutions to protect the drinking water pipes in residential buildings from corrosion. Available as compact dosing system exaliQ:KC6 with 3-litre bottle or as system with suction lance exaliQ:SC6 with stackable 15-litre canister. In case of high water consumption, the exaliQ:SC systems with suction lance can also be retrofitted with a 60-litre canister instead of the 15-litre one. To do so, the conversion kit for exaliQ:SC systems, which includes a 60-litre suction lance, is required.

Recording of important dosing data over a period of up to one year and readout via USB interface. Bayonet lock for 3-litre bottle in case of exaliQ:KC6 and 15-litre suction lance for exaliQ:SC dosing systems (dosing canister not included in the scope of supply). Operating panel with status illumination. Illuminated LED ring as visual signal. Indication of the filling level of the dosing agent (low or empty) with dry-run protection including visual and acoustic signal. Also available as softliQ variants with iQ Comfort communication interface (refer to page 29), requiring only little installation effort.

Scope of supply: Basic variant exaliQ:KC/SC with contact water meter for volume-based dosing. Control and pump unit with click bracket for quick installation on the wall or at the water meter. 24 V power supply plug with cable of 1.9 m in length as well as dosing line with dosing valve. (Dosing agent not included in the scope of supply.)

### Specifications

- Power supply 230 V, 50 Hz
- Operating voltage 24 V
- Max. water temperature 30 °C at installation site
- Nominal pressure PN 10
- Dosing volume 100 ml/m<sup>3</sup>

Dosing system exaliQ	KC6	SC6	SC10	SC20	SC30
Nominal connection diameter [R]	1"	1"	1¼"	1½"	2"
Max. operating range max. [m <sup>3</sup> /h] <sup>1</sup>	6	6	10	20	30
Dosing tank [l]	3	15	15	15	15
Installation length without screw connections [mm]	140	140	140	190	240
with screw connections [mm]	222	222	231	312	356
Order no. (RG-A)	117 400	117 405	117 410	117 415	117 420

Accessories	Order no. (RG-A)
Conversion kit for exaliQ:SC systems, 60-litre suction lance	117 490
Conversion kit exaliQ:KC6 to exaliQ:SC6 (15-litre suction lance + adapter)	117 495

Conversion from EXADOS to exaliQ	Order no. (RG-B)
Adapter kit 1" for conversion from EXADOS EK 6/ES 6 to exaliQ:KC6/SC6	101 865
Adapter kit 1¼" for conversion from EXADOS ES 12 to exaliQ:SC10	101 866

<sup>1</sup> For short-term peak flows. For long-lasting flows and continuous flow, use GENODOS DME, refer to page 30.



**Your advantage:**  
Extension of warranty  
by 12 months when you  
register your product



Dosing system exaliQ:KC6-e, compact system



Dosing system exaliQ:SC6-e, system with suction lance

Safety Devices  
Dosing Technology

## Dosing systems exaliQ:KC6-e/SC6-e for combination with softener series softliQ:SD/MD

Volume-based dosing of exaliQ mineral solutions in combination with water softeners softliQ:SD/MD to protect the drinking water pipes in residential buildings from corrosion. Available as compact dosing system exaliQ:KC6-e with 3-litre bottle or as system with suction lance exaliQ:SC6-e with stackable 15-litre canister.

Easy wall mounting possible, so that no adaptation of the pipe is required. The dosing point ist included in the connection block of the softliQ system. Reception of dosing signal from water softener. No additional water meter fitting required. Communication interface iQ Comfort for information exchange with water softeners softliQ:SD21, SD23, MD32, MD38. Complimentary Grünbeck app myProduct for status checks. Recording of important dosing data over a period of up to one year and readout via USB interface. Bayonet lock for 3-litre bottle in case of exaliQ:KC6-e and 15-litre suction lance for exaliQ:SC6-e (dosing canister not included in the scope of supply). Operating panel with status illumination. Illuminated LED ring as visual signal. Signalling of the level of the dosing agent (low or empty) with dry-run protection including visual and acoustic signal.

Scope of supply: Control and pump unit with click bracket, connecting cable iQ comfort, 14 V power supply plug with cable of 1.9 m in length as well as dosing line with dosing valve. (Dosing agent not included in scope of supply.)

### Specifications

- Power supply 230 V, 50 Hz
- Operating voltage 24 V
- Max. water temperature 30 °C at installation site
- Nominal pressure PN 10
- Dosing volume 100 ml/m<sup>3</sup>

Dosing system exaliQ	KC6-e	SC6-e
Compatible with water softener	softliQ:SD21/23 softliQ:MD32/38	softliQ:SD21/23 softliQ:MD32/38
Nominal connection diameter [R]	refer to connection block softliQ	refer to connection block softliQ
Max. operating range [m <sup>3</sup> /h] <sup>1</sup>	refer to softliQ	refer to softliQ
Dosing canister [l]	3	15
Order no. (RG-A)	117 460	117 465

Accessories	Order no. (RG-A)
Conversion kit exaliQ:KC6 to exaliQ:SC6 (15-litre suction lance + adapter)	117 495

<sup>1</sup> For short-term peak flows. For long-lasting flows and continuous flow, use GENODOS DME, refer to page 30.



Your advantage:  
Extension of warranty  
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register your product



Dosing system GENODOS DME<sup>1</sup>



NEW

GENODOS DME Delta-p<sup>1,2</sup>

## Dosing systems GENODOS DME

Volume-controlled dosing of exaliQ mineral solutions in commercial and industrial buildings, as all-inclusive dosing system for stackable 15-litre canisters. In case of high water consumption, a 60-litre canister instead of the 15-litre one can be retro-fitted. To do so, the conversion kit for GENODOS DME systems, which includes a 60-litre suction lance, is required.

Dosing pump GENODOS GP-/40 as self-priming, low-noise and continuously adjustable diaphragm dosing pump, automatically deaerating against pressure (pump head made of chemical-resistant plastic) with synchronous motor, pump preset and under seal, with fixing bracket for wall or floor mounting, with connection options for activation via external pulse, empty signal, including voltage-free fault signal output. Contact water meter with pulse cable to pump electronics, including water meter screw connections or flanges. Dosing line, dosing group as well as suction lance for stackable 15-litre canisters.

## Dosing systeme GENODOS DME Delta-p with interface to Delta-p

Reception of dosing signal directly from the water softener. No additional water meter fitting required. Easy and quick installation. The electric pulse cable to connect the dosing system to the Delta-p is included in the scope of supply.

### Specifications

- Max. suction head 1.5 mWC
- Max. delivery pressure 10 bar for DME 6 & 10, 8 bar for DME 20 & 30, 6 bar for DME 80 & 100
- Dosing volume 100 ml/m<sup>3</sup>
- Temperature min. 5 °C - max. 30 °C

Dosing system GENODOS DME	6	10	20	30	80	100	Delta-p
Dosing pump type	1/40	2/40	6/40	6/40	10/40	10/40	2/40
Nominal connection diameter	R 1"	R 1 1/4"	R 1 1/2"	R 2"	DN 80	DN 100	–
Standard capacity [m <sup>3</sup> /h]	6	10	20	30	80	100	refer to Delta-p
Pressure loss at standard capacity [bar]	0.5	0.8	0.8	0.8	0.6	0.8	refer to Delta-p
RG-	A	A	A	A	B	B	A
Order no.	163 435	163 445	163 455	163 465	163 475	163 485	163000010000

<sup>1</sup> The disposable canister is not included in the scope of supply.

Accessories	Order no.	RG-
Conversion kit GENODOS DME, 60-litre suction lance	163 765	A
Insert with injection point G 1/4" at soft water outlet for Delta-p 1"	185000010000	B
Insert with injection point G 1/4" at soft water outlet for Delta-p 1 1/4"	185000020000	B
Insert with injection point G 1/4" at soft water outlet for Delta-p 1 1/2"	185000030000	B
Insert with injection point G 1/4" at soft water outlet for Delta-p 2"	185000040000	B

<sup>1</sup> The disposable canister is not included in the scope of supply.

<sup>2</sup> Delta-p not included in the scope of supply.

NEW  
NEW  
NEW  
NEW

## Selection of exaliQ mineral solutions

- The shelf life of the mineral solutions is 2 years max (if kept cool and protected from light).
- We recommend using up the solution within 6 months after opening the canister.
- We certify that the mineral substances contained in the colourless, liquid concentrates comply with the publication of the list of treatment substances and disinfection processes according to § 11 of the German Drinking Water Ordinance - 19<sup>th</sup> amendment (Edition: December 2017)
- The mineral solutions are packed hygienically, they are sterile and sealed with a tamper-evident cap.
- The ready-to-use mineral solutions are adapted to the pumping capacity (100 ml/m<sup>3</sup>) of the dosing systems.
- Chemical resistance group for GENODOS: Standard.

Mineral solution	Effect	Materials	Field of application
exaliQ control	Rehabilitation	Galvanised pipes	For the rehabilitation of corroded zinc pipes (often recognisable by brown-coloured water). After the rehabilitation (approx. 6 months): Change to a different exaliQ dosing agent.
exaliQ safe	Corrosion protection	Galvanised pipes and copper materials/brass	Corrosion protection for water in the hardness range soft to medium (up to 14 °dH (2.5 mmol/l)) 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 & Hardness stabilisation	Galvanised pipes and copper materials/brass	Hardness stabilisation and corrosion protection for water up to 21 °dH (3.75 mmol/l) and to reduce the introduction of heavy metals (e.g. lead). For water temperatures up to 60 °C. In case of a water hardness > 21 °dH (3.75 mmol/l), we recommend a water softener to treat the hardness and then to switch to exaliQ safe.
exaliQ pure	Hardness stabilisation	Galvanised pipes, copper materials/brass, stainless steel and plastic pipes/multi-layer composites	For circulation water in solar systems or the 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 (3.75 mmol/l) (total alkalinity > 15 °dH (5.4 mmol/l)).  <i>Consultation with Grünbeck recommended prior to initial application.</i>
exaliQ neutra	Increase of pH value	Galvanised pipes and copper materials/brass	Corrosion protection for soft water with high carbon dioxide concentrations as well as downstream of water softeners. Corrosion protection due to the binding of free carbon dioxide and an increase of the pH value.  <i>Consultation with Grünbeck recommended prior to initial application.</i>

Safety Devices  
Dosing Technology

Country-specific  
availability of the  
mineral solutions. Please  
contact your local  
Grünbeck expert.

• Also suitable for EXADOS dosing computers EK/ES and dosing systems GENODOS DME.



Mineral solution exaliQ safe, 3 l



Mineral solution exaliQ safe, 15 l

### 3-litre bottle for exaliQ:KC6/KC6-e

- Packaging unit: 1 box containing 2 bottles of 3 litres each
- Recommended for a water consumption/year of up to 150 m<sup>3</sup>  
(one bottle of exaliQ is sufficient for the treatment of 30 m<sup>3</sup> of drinking water)

Mineral solution	Order no. (RG-I)
exaliQ control	114 031
exaliQ safe	114 032
exaliQ safe+	114 033
exaliQ pure	114 034
exaliQ neutra	114 035

### Stackable 15- or 60-litre canister for dosing systems exaliQ:SC/SC6-e and GENODOS DME

- Stackable 15-litre canister, recommended for a water consumption/year of > 150 up to 600 m<sup>3</sup>  
(1 x 15 litres of exaliQ is sufficient for the treatment of 150 m<sup>3</sup> of drinking water)
- Stackable 60-litre canister, recommended for a water consumption/year of > 600 m<sup>3</sup>  
(1 x 60 litres of exaliQ is sufficient for the treatment of 600 m<sup>3</sup> of drinking water)

Mineral solution	Order no. (RG-I)
<b>15-litre canister</b>	
exaliQ control	114 071
exaliQ safe	114 072
exaliQ safe+	114 073
exaliQ pure	114 074
exaliQ neutra	114 075

Mineral solution	Order no. (RG-I)
<b>60-litre canister</b>	
exaliQ control	114 081
exaliQ safe	114 082
exaliQ safe+	114 083
exaliQ pure	114 084
exaliQ neutra	114 085

• Also suitable for EXADOS dosing computers EK/ES and dosing systems GENODOS DME.

Country-specific  
availability of the  
mineral solutions. Please  
contact your local  
Grünbeck expert.

# Water softeners for residential applications

1 mm of  
scale deposits  $\Delta$   
10 % more energy  
consumption!

Excerpt from DIN 1988-200:

Calcium carbonate mass concentration <sup>1</sup> [mmol/l]	Category	Measures at $\Delta \leq 60$ °C	Measures at $\Delta > 60$ °C
$\geq 2.5$ (corresponds to $\geq 14$ °dH)	hard	stabilisation or softening recommended	stabilisation or softening
$\geq 1.5$ up to $< 2.5$ (corresponds to $\geq 8.4$ °dH up to $< 14$ °dH)	medium	none or stabilisation or softening	stabilisation or softening recommended
$< 1.5$ (corresponds to 8.4 °dH)	soft	none	none

Application recommendations according to DIN 1988-200, 12.6.2	
1 – 4 people	softliQ:SD18
1 – 9 people	softliQ:SD21
1 – 12 people	softliQ:SD23
1 – 20 people	softliQ:MD32
1 – 30 people	softliQ:MD38
Up to 5 people	softliQ:PB20 (water softening including 99.99 % protection against germs)
Starting from 13 people	Delta-p (triple water softener)

<sup>1</sup> Refer to § 9, clause 2 of the Law on Detergents and Cleaning Agents

## Single systems

Single systems feature one exchanger tank. The control unit continuously analyses the water consumption on site and starts the regeneration during a time when usually no water is needed. During the regeneration process, hard water is available, however (**softliQ:SD**).

## Twin systems

Twin systems ensure a continuous soft water supply. In times of high consumption, both exchanger tanks are flown through in parallel and the system only alternates between the tanks during the regeneration process (**softliQ:MD**). The **softliQ:PB20** system also features an additional hygiene unit.

### Reasons for water softening

**DIN EN 806-2, B.6:** "... Water softeners working according to the ion exchange principle are used for the reduction or complete removal of the hardness contained in the water, if the water gives an indication of scaling. ..." **DIN 1988-200, 12.6.1:** "Water softeners must comply with the standards DIN EN 14743 and DIN 19636-100."

## Regeneration with sodium chloride

Water softeners which work according to the principle of ion exchange are regenerated by means of sodium chloride (salt tablets in 25 kg bags). Systems with DVGW certificate are designed according to DIN EN 14743 and DIN 19636-100 standards, are cost-effective, hygienic and environmentally safe due to the so-called economy salting and the disinfection unit.

## Processes for water softening by means of membrane technology

Water softening is not only feasible by means of the conventional ion exchange. With the **ion selector NANO-X** system, partial softening can also be achieved by way of nanofiltration without any need for regeneration agents or chemicals.

## Residual hardness

As the water which has passed through the pressure tank filled with ion exchanger resin is completely softened, it must be mixed with hard water if it is to be used as drinking water. The new German Drinking Water Ordinance does not stipulate a limit value; however, we recommend a residual hardness of 3 - 6 °dH (0.5 - 1.1 mmol/l).

## Systems for commercial and industrial applications

Usually, softened water of  $< 0.1$  °dH ( $< 0.02$  mmol/l) is required for production or industrial water in commercial and industrial applications. The guidelines of DIN 19636-100 do not apply in this case. For safety reasons, system separators must be installed unless the system is considered to be intrinsically safe (**water softener softliQ:MD12i, Delta-p-l**).



For Starters



For Pros



For Leaders

	softliQ:SD18	softliQ:SD21	softliQ:SD23
Water softener	✓	✓	✓
Application recommendation from ... to ... people	1 – 4 people	1 – 9 people	1 – 12 people
Regeneration salt supply [kg]	35	35	35
Soft-Close function	✓	✓	✓
Colour touch display 4.3"	✓	✓	✓
Wi-Fi	✓	✓	✓
Mobile system control via Grünbeck's myProduct app	✓	✓	✓
Illuminated LED ring	—	✓	✓
Salt supply indicator	—	✓	✓
Water sensor	—	✓	✓
Communication interfaces 2 x iQ Comfort	—	✓	✓
LAN	—	✓	✓
Connection for delivery pump for regeneration water	—	—	✓
Parallel operation thanks to 2-tank water softener	—	—	—
Electronically controlled blending	—	—	—
Drain connection included in scope of supply	—	—	✓
Insulation kit included in scope of supply	—	—	✓
99.99 % protection against germs thanks to hygiene technology	—	—	—



For Performers



For Experts



softliQ:MD32	softliQ:MD38	softliQ:PB20
✓	✓	✓
1 – 20 people	1 – 30 people	up to 5 people
95	95	95
✓	✓	✓
✓	✓	—
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	—
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
—	—	—
—	—	✓

Softening  
Residential



### Water softener softliQ:SD

Compact single water softener with intelligent adaptation of the system capacity and the times of regeneration to the individual consumption pattern of the user. Regenerations automatically take place in a time slot where usually no water is needed. Alternatively, the regeneration times and the capacity can also be set manually. The intelligent control unit and the 4.3" touch display enable the easy, intuitive start-up and operation of the system. The detachable brine tank simplifies hygienically clean maintenance. Via Wi-Fi, the system can easily be connected to Grünbeck's myProduct app.

Furthermore, the system features a lid with Soft-Close function, a disinfection unit, a water test kit for the determination of hardness, an audio signal and flexible connection hoses. The R 1" connection block with water meter screw connections has an installation length of 190 mm without screw connection and 271 mm with screw connection. Included in the connection block are: a non-return valve, an overflow valve, two shut-off valves (bypass), a blending valve as well as a dosing point for an optional connection of dosing systems.

#### Additionally, for softliQ:SD21 and softliQ:SD23:

- Illuminated LED ring as visual signal and illumination of the brine tank's interior
- Indication of salt supply for continuous monitoring and for early notification
- Water sensor to indicate uncontrolled water leakages
- 2 x iQ Comfort connections for easy connection of Grünbeck systems (e.g. exaliQ)
- LAN connection, as alternative connection to Grünbeck's myProduct app

#### Additionally, for softliQ:SD23:

- Programmable output, e.g. for the connection of the delivery pump for regeneration water
- Fault signal contact (collective fault signal)
- Drain connection and insulation kit included in the scope of supply

Water softener	softliQ:SD18	softliQ:SD21	softliQ:SD23
Nominal flow at a pressure loss of 1.0 bar $K_v$ -value (DIN EN 14743) [m³/h]	1.8	2.1	2.3
at a pressure loss of 1.0 bar, 20 °dH (3.5 mmol/l) to 8 °dH (1.4 mmol/l) [m³/h]	3.0	3.5	3.8
Application recommendation by Grünbeck: up to ... people	1 - 4	1 - 9	1 - 12
Nominal capacity, variable [mol]	1.1 - 2.5	1.4 - 3.6	1.6 - 4.1
Nominal capacity, variable [°dH x m³]	6 - 14	8 - 20	9 - 23
Regeneration salt supply [kg]	35	35	35
Order quantity per pallet, 800 x 1,200 mm [pcs]	4	4	4
<b>Order no. (RG-A)</b>	<b>189 100</b>	<b>189 200</b>	<b>189 300</b>

• Accessories: Please refer to pages 22, 29 and 39.

• The drain connection and the insulation kit are not included in the scope of supply of the softliQ:SD18 and softliQ:SD21 systems.



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#### Specifications

- Dimensions (w x h x d)  
525 x 912 x 580 mm
- Max. water/ambient temperature  
30/40 °C
- Power supply 100 - 250 V, 50/60 Hz
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 8.0 bar



Water softener softliQ:MD

Softening  
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### Water softener softliQ:MD

Compact twin water softener with intelligent adaptation of the system capacity and the times of regeneration to the individual consumption pattern of the user. Alternatively, the regeneration times and the capacity can also be set manually. The electronic blending automatically controls the desired soft water hardness subject to the system flow. The intelligent control unit and the 4.3" touch display enable the easy, intuitive start-up and operation of the system. The detachable brine tank simplifies hygienically clean maintenance. Via LAN and Wi-Fi, the system can easily be connected to Grünbeck's myProduct app.

Furthermore, the system features a lid with Soft-Close function, a disinfection unit, a water test kit for the determination of hardness, an audio signal and flexible connection hoses. The R 1" (and the MD38's R 1¼") connection block with water meter screw connections has an installation length of 190 mm without screw connection and 271 mm with screw connection. Included in the connection block are: a non-return valve, an overflow valve, two shut-off valves (bypass), two sampling valves for untreated and treated water as well as a dosing point for an optional connection of dosing systems.



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#### All softliQ:MD systems include:

- Illuminated LED ring as visual signal and illumination of the brine tank's interior
- Indication of salt supply for continuous monitoring and for early notification
- Water sensor to indicate uncontrolled water leakages
- 2 x iQ Comfort connections for easy connection of Grünbeck systems (e.g. exaliQ)
- LAN connection, as alternative connection to Grünbeck's myProduct app
- Programmable output, e.g. for the connection of the delivery pump for regeneration water
- Fault signal contact (collective fault signal)
- Drain connection included in the scope of supply

Water softener	softliQ:MD32	softliQ:MD38
Nominal flow at a pressure loss of 1.0 bar $K_v$ -value (DIN EN 14743) [m³/h]	3.2	3.8
at a pressure loss of 1.0 bar, from 20 °dH (3.5 mmol/l) to 8 °dH (1.4 mmol/l) [m³/h]	4.3	5.6
Application recommendation by Grünbeck: up to ... people	1 - 20	1 - 30
Nominal capacity, variable (both exchangers) [°dH x m³/mol]	12 - 28/2.2 - 5.0	16 - 40/2.8 - 7.2
Nominal capacity, variable (per exchanger) [°dH x m³/mol]	6 - 14 /1.1 - 2.5	8 - 20/1.4 - 3.6
Regeneration salt supply [kg]	95	95
Order quantity per pallet, 800 x 1,200 mm [pcs]	2	2
Size of connection block ["]	1	1¼
<b>Order no. (RG-A)</b>	<b>187 400</b>	<b>187 450</b>

• Accessories: Please refer to pages 22, 29 and 39.

• The insulation kit is not included in the scope of supply.



Water softener softliQ:PB20

### Water softener softliQ:PB20 with additional Grünbeck hygiene technology

Twin water softener with additional adsorber unit<sup>1</sup> for hygienic water and small footprint. Thanks to Grünbeck's hygiene technology, pathogenic germs are retained at the hygiene material and then rendered harmless by means of disinfection. It is a physical process without any addition of chemicals to the drinking water. The system automatically regulates the desired soft water hardness subject to the system's flow rate. Developed in particular for households that attach great importance to the hygienic safety of their drinking water. Intelligent control unit with very low power consumption, colour display and guided start-up program. The technical component can be detached for easy, clean and hygienic maintenance. Lid with Soft-Close function for gentle closing of the lid. Wi-Fi interface and control via myGrünbeck app. Voltage-free fault signal output and programmable digital input. System disinfection unit, connection block with water meter screw connections, installation length 190 mm without screw connection, 271 mm with screw connection, non-return valve, two shut-off valves, two flame-sterilisable sampling valves for untreated and treated water, dosing point for optional connection of dosing systems, flexible connection hoses, water test kit to determine the hardness. Indication of salt supply for continuous monitoring and early warning as well as illuminated LED ring as a visual signal and for the illumination of the brine tank's interior. The new additional function flushing+ can be set to an individual time and offers an even better drinking water quality. The hygiene elements must be replaced at regular intervals.

Drain connection DN 50 according to DIN EN 1717 included in the scope of supply.

#### Specifications

- Dimensions (w x h x d) 525 x 912 x 580 mm
- Max. water/ambient temperature 30/40 °C
- Power supply 85 - 265 V, 50/60 Hz
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 8.0 bar

Water softener	softliQ:PB20
Nominal flow at a pressure loss of 1 bar $K_v$ -value (DIN EN 14743) [m³/h]	2.0
at a pressure loss of 1 bar, from 3.5 mmol/l to 1.4 mmol/l [m³/h]	2.4
Application recommendation by Grünbeck: up to ... people	5
Recommended interval for replacement of hygiene elements:	
after max. ... years at the latest	2
after a max. service of ... [m³]	250
Nominal capacity (both exchangers) [mol]	1.8
Nominal capacity (per exchanger) [mol]	0.9
Regeneration salt supply [kg]	95
Order quantity per pallet 800 x 1,200 mm [pcs]	2
Size of connection block ["]	1
<b>Order no. (RG-A)</b>	<b>525 460</b>

<sup>1</sup> For more information on the process of Grünbeck's hygiene technology, please refer to pages 48/49.

Accessories: Please refer to pages 29 and 39.



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Installation kit softliQ

Drain connection DN 50 with siphon acc. to DIN EN 1717

Accessories for water softeners		System designation										Order no.	RG-
		softliQ:SD18	softliQ:SD21	softliQ:SD23	softliQ:MD32, softliQ:MD12i	softliQ:MD38	softliQ:PB20	safeQ:EB30	WINNI-mat VGX	Weichwassermeister GSX			
<b>Accessories</b>													
<b>Connection angle</b>													
1 pair for cramped installation positions, connection hoses can be laid much closer alongside the system		-	-	-	•	-	•	•	•	•		187 865	A
<b>Double screw connection 1¼"</b>													
For direct connection of the filter (pureliQ or BOXER X) to the connection block of the water softener		•	•	•	•	-	•	•	•	•		115 334	B
<b>Delivery pump for regeneration water</b>													
For the reliable discharge of the regeneration water volume into discharge pipes located at higher levels (max. 2.5 m), consisting of: delivery pump incl. connection cable to the control electronics of the water softeners		-	-	•	•	•	•	•	•	•		188 800	A
<b>Drain connection DN 50 with siphon according to DIN 1717 for small water softeners, backwash filters and system separators<sup>2</sup></b>		•	•	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	•	•	•	•		188 875	A
<b>Supplementary blending valve</b>													
To generate a second blending hardness (e.g. for a separate pipe towards the kitchen, for technical applications, etc.)		•	•	•	•	-	-	-	•	•		187 870	A
<b>Supplementary soft water outlet</b>													
To easily branch off a 0 °dH (0 mol/l) pipe		•	•	•	-	-	-	-	•	•		187 875	A
<b>Extension kits for connection hoses</b>													
<b>Extension kit for connection hoses DN 22</b>		•	•	•	-	-	-	-	•	•		187 860e	B
<b>Extension kit for connection hoses DN 25</b>		-	-	-	•	-	•	•	-	-		187 660e	B
<b>Extension kit for connection hoses DN 32</b>		-	-	-	-	•	-	-	-	-		187 680e	B
<b>Insulation kit</b>													
With the insulation kit, the system's connection equipment is insulated properly and professionally													
<b>Insulation kit softliQ:SD</b>		•	•	• <sup>1</sup>	-	-	-	-	-	-		188 870	A
<b>Installation kit softliQ<sup>3</sup></b>													
To combine a Grünbeck water softener softliQ:SD18, SD21, SD23 and softliQ:MD32 with a new or existing fine or backwash filter (DN 25) of the pureliQ, BOXER and BOXER X series to an installation dimension of 100 mm		•	•	•	•	-	-	-	-	-		188 865	B
<b>Wall bracket for softliQ:SD</b>		•	•	•	-	-	-	-	-	-		189 895	B

Softening  
Residential

<sup>1</sup> Already included in the scope of supply.

<sup>2</sup> For maximum flow rates and application limits, please refer to the product data sheet and the operation manual.

<sup>3</sup> Double screw connection (order no. 115 334) for installation kit softliQ to install a protectliQ safety device in addition to the filter and the water softener.



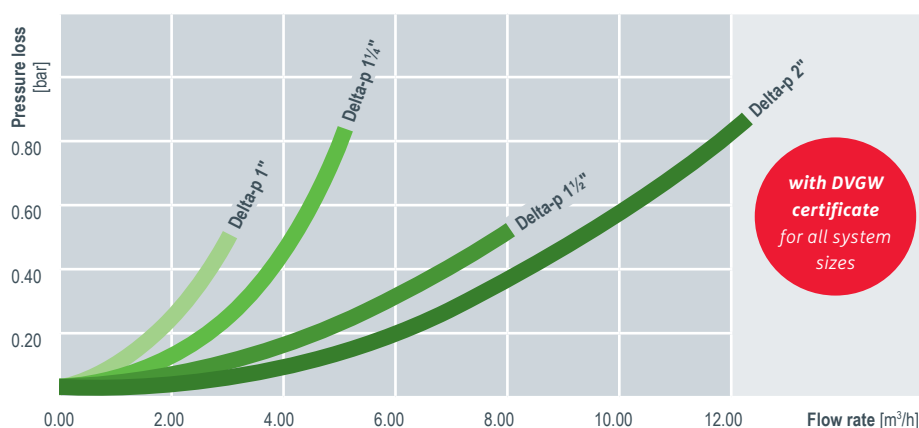
Selection Table – Water Softeners	Connection diameter R ["]	Nominal flow [m³/h] (0 mmol/l) at a pressure loss of max. 1.0 bar	Nominal flow [m³/h] (raw water 3.5 mmol/l, soft water hardness 1.4 mmol/l)	Application recommendation by Grünbeck					Order no.	Page
				up to 4 people	up to 9 people	up to 12 people	up to 20 people	up to 30 people		
softliQ/Weichwassermeister systems										
softliQ:SD18	1	1.8	3.0	•	–	–	–	–	189 100	36
softliQ:SD21	1	2.1	3.5	•	•	–	–	–	189 200	36
softliQ:SD23	1	2.3	3.8	•	•	•	–	–	189 300	36
softliQ:MD32¹	1	3.2	4.3	•	•	•	•	–	187 400	37
softliQ:MD38¹	1¼	3.8	5.6	•	•	•	•	•	187 450	37
softliQ:PB20	1	2.0	2.4	•	–	–	–	–	525 460	38
softliQ:MD12i	1	1.2	–	–	–	–	–	–	187 140	44
GENO-mat systems										
GENO-mat duo WE-X 65/50	1	2.6	3.3	–	–	–	–	–	186 100/186 200	45
GENO-mat duo WE-X 150/130	1	2.9	5.0	–	–	–	–	–	186 110/186 210	45
GENO-mat duo WE-X 300/230	1	3.5	8.3	–	–	–	–	–	186 120/186 220	45
GENO-mat duo WE-X 450/330	1½	4.9	10.0	–	–	–	–	–	186 130/186 230	45
GENO-mat duo WE-X 750/530	1½	6.3	15.8	–	–	–	–	–	186 140/186 240	45
Delta-p systems										
Delta-p 1" + Delta-p-l 1"	1	3.0	5.0	–	–	–	–	•/–	185 100/185 200	42 - 43
Delta-p 1¼" + Delta-p-l 1¼"	1¼	5.0	8.3	–	–	–	–	•/–	185 110/185 210	42 - 43
Delta-p 1½" + Delta-p-l 1½"	1½	8.0	13.3	–	–	–	–	•/–	185 120/185 220	42 - 43
Delta-p 2" + Delta-p-l 2"	2	12.0	20.0	–	–	–	–	•/–	185 130/185 230	42 - 43

<sup>1</sup> 2-tank water softener: parallel operation for short-term peak flows, e.g. raindance shower.

## Grünbeck water softeners for trade and industry – general design information

Fully automatic ion exchangers for softening of drinking water for commercial and industrial applications, according to DIN EN 1717 **GENO-mat** systems must be installed with system separators. Complete systems with plastic exchanger tank, including built-in parts, high-grade ion exchanger filling material, control valve made of brass or red brass, with electromechanical actuator. Microprocessor controller (types ZF and ZFW with timer control only). Regeneration can be activated fully automatically or manually. Salt dissolving tank with lid, integrated brine valve, safety valve and brine buffer technology. Water test kit for the determination of hardness.

# Water Softeners for Trade and Industry



## Triple water softeners Delta-p

Water softeners based on the ion exchange principle have been regarded as the tried and tested standard for many years now and have essentially been used to date in large residential buildings, building complexes and industrial applications which consume large volumes of water. Pressure losses caused by the softening and the extremely costly and time-consuming installation and dimensioning of the systems, however, always proved to be disadvantageous. With the triple water softener **Delta-p**, Grünbeck Wasseraufbereitung GmbH has developed a completely innovative solution to these problems. The patented control valve of the triple water softener **Delta-p** guarantees the uninterrupted supply of soft water with only a minimum loss of pressure.

## Triple softening

Thanks to its significant benefits, the **Delta-p** series convinces trade, craftsmen and builders alike. As a triple system, the unit continuously provides soft water and sets new standards due to its low pressure loss and extra low consumption of operating materials. The fresh water guarantee with its

automatic flushing of the bottle content prior to the activation of the exchanger tank in standby mode ensures the hygienic operation of the system. The selection of the system size is based on the dimension of the pipes laid in the building, therefore extensive calculations of capacity and peak volume flows become superfluous. A completely illustrated instruction manual simplifies the installation of the system. Thanks to the electronically controlled blending unit, the setting of the required residual hardness becomes child's play.

The **Delta-p** system is available in sizes 1", 1 1/4", 1 1/2" and 2" for either drinking water or industrial applications. A pre-alarm salt supply can additionally be connected to prompt users to refill the salt dissolving tank in good time. Apart from the standard salt dissolving tanks with a regeneration salt supply of 65 or 180 kg, larger salt dissolving tanks are available as well. Connection kits with shut-off valves, overflow valve and flexible connection hoses are available for easy connection to the drinking water installation. The materials of the connection technology installed can be used for drinking water.



### Water softeners Delta-p

Fully automatic triple water softeners working according to the ion exchange principle, for the generation of fully/partially softened water with volume-controlled regeneration.

3 exchanger tanks made of pressure-resistant plastics with a filling of ion exchanger material, distribution system and adjustable height adapters, central control valve made of brass for hard, soft and regeneration water, microprocessor controller with simple 3-key operation and voltage-free signal contact and additional fault signal contact, 5 contact water meters (the industrial version only has 4) to transmit the water flow rates to the controller, electronically controlled blending valve, disinfection unit for automatic disinfection according to the electrolysis principle, PE salt dissolving tank with lid, sieve bottom and special brine valve, including operation manual.

### Water softeners Delta-p-I “industrial version”

As above, however without blending unit, for the generation of fully softened water < 0.02 mmol/l, intrinsically safe system (direct connection to the drinking water installation is admissible).

#### Specifications

- Max. water temperature 30 °C
- Power supply 230 V, 50/60 Hz
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 10.0 bar
- Operating voltage 24 V

Delta-p/Delta-p-I	1"	1¼"	1½"	2"
Nominal connection diameter [DN]	25	32	40	50
Nominal flow [m³/h]	3	5	8	12
Nominal flow of blending water [m³/h] <sup>1</sup>	5.0	8.3	13.3	20.0
Pressure loss at nominal flow [bar]	0.5	0.8	0.5	0.8
Capacity per kg of regeneration salt [mol/kg]	5.7	5.7	5.7	5.7
Regeneration salt supply [kg] <sup>2</sup>	65	65	180	180
Salt consumption per regeneration, approx. [kg]	1.5	2.5	5.2	7.2
<b>Order no. Delta-p (RG-B)</b>	<b>185 100</b>	<b>185 110</b>	<b>185 120</b>	<b>185 130</b>
<b>Order no. Delta-p-I (RG-B)</b>	<b>185 200</b>	<b>185 210</b>	<b>185 220</b>	<b>185 230</b>

<sup>1</sup> In case of a raw water hardness of 3.5 mmol/l and a soft water hardness of 1.4 mmol/l (not Delta-p-I).

<sup>2</sup> For larger salt dissolving tanks, please inquire.

• The drain connection is NOT included in the scope of supply. Please refer to page 43.



Delta-p 2" on pedestal



Connection kit Delta-p 1 1/2" - 2", installation length 260 mm

## Water softeners Delta-p/Delta-p-l

Mounted on pedestal, ready for connection

Triple water softeners as described on pages 41 and 42 – mounted on pedestal, including connection kit.

Delta-p/Delta-p-l	1"	1 1/4"	1 1/2"	2"
Dimensions (w x h x d) [mm] <sup>1</sup>	770 x 1,500 x 770	770 x 1,500 x 770	960 x 1,840 x 880	960 x 1,840 x 880
Diameter of salt dissolving tank [mm] <sup>2</sup>	410	410	570	570
Height of salt dissolving tank [mm] <sup>2</sup>	670	670	860	860
Order no. Delta-p (RG-B)	185 105	185 115	185 125	185 135
Order no. Delta-p-l (RG-B)	185 205	185 215	185 225	185 235

<sup>1</sup> Dimensions without salt dissolving tank.

<sup>2</sup> Salt dissolving tank not mounted on pedestal.

Accessories Delta-p	Order no. (RG-B)
Connection kit Delta-p 1" - 1 1/4", installation length 190 mm <sup>3</sup>	185 807
Connection kit Delta-p 1 1/2" - 2", installation length 260 mm <sup>3</sup>	185 823
Connection kit Delta-p-l 1" - 1 1/4", installation length 190 mm <sup>3</sup>	185 808
Connection kit Delta-p-l 1 1/2" - 2", installation length 260 mm <sup>3</sup>	185 824
Pedestal for Delta-p 1" - 1 1/4" (also for Delta-p-l)	185 820
Pedestal for Delta-p 1 1/2" - 2" (also for Delta-p-l)	185 825
Communication module DE200 Profibus	185 890
Drain connection DN 50 acc. to DIN EN 1717, including siphon for Delta-p	185 775

<sup>3</sup> Screw connections in case of premature installation of the connection set – see below.

Pre-alarm salt supply	Order no. (RG-B)
To monitor the salt supply by means of a light sensor on the lid of the salt dissolving tank	185 335

Screw connections <sup>4</sup>	Order no. (RG-B)
Screw connection for connection block Delta-p 1"	185 846
Screw connection for connection block Delta-p 1 1/4"	185 847
Screw connection for connection block Delta-p 1 1/2"	185 848
Screw connection for connection block Delta-p 2"	185 849

<sup>4</sup> Screw connections are included in the Delta-p's scope of supply; the drain connection is NOT included in the scope of supply.

· Accessories: For dosing system GENODOS DME Delta-p to add exaliQ mineral solutions, please refer to page 30.

Softening  
Trade/Industry

#### Specifications

- Dimensions (w x h x d)  
525 x 912 x 580 mm
- Max. water/ambient temperature 30/40 °C
- Power supply 100 - 250 V, 50/60 Hz
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 8.0 bar



Water softener softliQ:MD12i

### Water softener softliQ:MD12i

#### Fully softened water < 0.1 °dH for trade and industry.

Compact twin water softener with two separate control heads in alternating operation and full salting for permanent soft water < 0.1 °dH. A complete regeneration takes place as soon as the exchanger in operation is exhausted. The second exchanger continues to ensure flawless operation. The water softener softliQ:MD12i works with a constant capacity figure. The nominal flow rate (1.2 m³/h up to a raw water hardness of 15 °dH) must not be exceeded under any circumstances. For use in the commercial and industrial sector only. Water demand, for instance for reverse osmosis systems, air conditioning systems, heating systems, laboratories, restaurants and catering and many more.

The intelligent control unit and the 4.3" touch display enable easy and intuitive start-up and operation of the system. The detachable brine tank simplifies hygienically clean maintenance. Via LAN and Wi-Fi, the system can easily be connected to Grünbeck's myProduct app. Furthermore, the system features a lid with Soft-Close function, a water test kit for hardness determination, an audio signal as well as flexible connection hoses. The connection block R 1" with water meter screw connections has an installation length of 190 mm without the screw connection and 271 mm with the screw connection. Integrated in the connection block are: a non-return valve, two shut-off valves, two sampling valves for untreated and treated water as well as a dosing point for the optional connection of dosing systems.

#### Additional features of the softliQ:MD12i:

- Disinfection unit
- Programmable output, e.g. as connection for delivery pump for regeneration water or regeneration signal to further systems
- Illuminated LED ring as a visual signal and illumination of the brine tank's interior
- Salt supply indicator for continuous monitoring and early notification
- Water sensor to indicate uncontrolled water leaks
- 2 x iQ Comfort connections for easy connection of Grünbeck systems (e.g. exaliQ:KC6e/SC6e)
- Fault signal contact (collective fault signal)
- Drain connection DN 50 with siphon according to DIN EN 1717 included in the scope of supply

Water softener	softliQ:MD12i
Nominal flow (0 °dH, 0 °f, 0 mol/m³) [m³/h] <sup>1</sup>	1.2
Pressure loss at nominal flow [bar]	0.5
Nominal capacity (exchangers in alternating operation) [m³ x °dH   mol]	2 x 15   2 x 2.7
Regeneration salt supply [kg]	95
Dimension of connection block ["]	1
<b>Order no. (RG-B)</b>	<b>187 140</b>

<sup>1</sup> The max. continuous flow decreases in case of raw water hardnesses of > 15 °dH.

• Accessories: please refer to page pages 22, 29 and 39.



Your advantage:  
Extension of warranty  
by 12 months when you  
register your product

### Specifications

- Full salting for residual hardness of < 0.02 mmol/l  
(GENO-mat duo WE-X 65, 150, 300, 450, 750)
- Economy salting for residual hardness  $\geq 0.35$  mmol/l  
(GENO-mat duo WE-X 50, 130, 230, 330, 530)
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 8.0 bar
- Water temperature 30 °C
- Power supply 85 - 250 V, 50/60 Hz
- Operating voltage 24 V DC



Water softener GENO-mat duo WE-X

## Water softeners GENO-mat duo WE-X

Fully automatic twin water softener working according to the principle of ion exchange for the generation of fully softened water with volume-controlled regeneration.

### Consisting of:

PE salt dissolving tank with lid and sieve bottom, special brine valve with connecting line (enables maximum continuous flow), exchanger tank made of pressure-resistant plastic with filling of ion exchanger resin and distribution system, central control valve made of red brass, microprocessor controller with simple 3-key operation and voltage-free signal/fault signal contact as well as program-mable input. Control unit with LCD graphic display (backlit), integrated SD card to record operating data. Contact water meter with water meter screw connections.

Softening  
Trade/Industry

GENO-mat duo WE-X (full salting)	65	150	300	450	750
Nominal connection diameter [DN]	25 fem	25 fem	25 fem	40 fem	40 fem
Max. continuous flow [m³/h]	2.0	3.0	5.0	6.0	9.5
K <sub>v</sub> value $\Delta p = 1.0$ bar [m³/h]	2.6	2.7	3.1	4.5	5.6
Nominal capacity [mol]	12.0	26.6	53.9	80.2	133.2
Regeneration salt supply [kg]	130	190	285	485	760
Salt consumption/reg. [kg]	3.6	8.0	16.2	25.3	40.0
Order no. (RG-B)	186 100	186 110	186 120	186 130	186 140

Fully automatic twin water softener working according to the principle of ion exchange, with volume-controlled regeneration, particularly suitable for the generation of partially softened water, with integrated blending valve up to type 230, starting from type 330 available as an option, economy salting for residual hardness  $\geq 0.35$  mmol/l.

GENO-mat duo WE-X (economy salting)	50	130	230	330	530
Nominal connection diameter [DN]	25 fem	25 fem	25 fem	40 fem	40 fem
Max. continuous flow [m³/h] <sup>1</sup>	3.3	5.0	8.3	10.0	15.8
K <sub>v</sub> value $\Delta p = 1.0$ bar [m³/h] <sup>1</sup>	4.3	4.5	5.2	7.5	9.3
Nominal capacity [mol]	9.5	20.9	42.3	60.0	95.2
Regeneration salt supply [kg]	65	130	190	285	285
Salt consumption/reg. [kg]	1.8	4.0	8.1	11.5	16.0
Order no. (RG-B)	186 200	186 210	186 220	186 230	186 240

<sup>1</sup> In case of a raw water hardness of 3.5 mmol/l and a soft water hardness of 1.4 mmol/l.



Connection kit 1 1/4"



Mechanical blending valve 1 1/4"

## Connection kits for water softeners 1", 1 1/4" and 1 1/2"

### Connection kits 1", 1 1/4" and 1 1/2"

#### Consisting of:

- Connection fitting 1", 1 1/4" and 1 1/2" with sampling valves
- Installation length 190 mm without screw connection
- Inlet strainer and non-return valve in water inlet
- Shut-off valves system inlet/system outlet
- Integrated overflow valve for emergency operation/peak withdrawal
- Water meter screw connections incl. seals
- Flexible connection hoses with transition fitting

### Connection kits 1"-I, 1 1/4"-I and 1 1/2"-I

#### Consisting of:

- Connection fitting 1"-I, 1 1/4"-I and 1 1/2"-I with sampling valves
- Otherwise identical to connection kits 1", 1 1/4" and 1 1/2", without overflow valve, however

	System capacity										
	50	130	230	330	530	65	150	300	450	750	
Connection kits											Order no. (RG-B)
Connection kit 1"	•	-	-	-	-	-	-	-	-	-	185 515
Connection kit 1 1/4"	-	•	•	-	-	-	-	-	-	-	185 530
Connection kit 1 1/2"	-	-	-	•	•	-	-	-	-	-	185 545
Connection kit 1"-I	-	-	-	-	-	•	•	-	-	-	185 505
Connection kit 1 1/4"-I	-	-	-	-	-	-	-	•	•	-	185 520
Connection kit 1 1/2"-I	-	-	-	-	-	-	-	-	-	•	185 540

## Accessories

### Mechanical blending valves

for the addition of raw water to generate any residual soft water hardness

### Order no. (RG-B)

Mechanical blending valve R 1"

126 010

Mechanical blending valve R 1 1/4"

126 015

### Pre-alarm salt supply

To monitor the salt supply by means of a light sensor on the lid of the salt dissolving tank

### Order no. (RG-B)

185 335

# Hygiene and disinfection

## Reasons for disinfection

The disinfection of the water aims at the elimination of pathogens such as viruses or bacteria that might be contained in the water – a goal which can either be achieved by dosing disinfectants (e.g. chlorine or chlorine dioxide) or by UV-C light treatment. Disinfection procedures are installed downstream of the water treatment systems and represent the last step in the process. Limit and reference values for microbiological substances that might be contained in the water are indicated in legal stipulations (e.g. the German Drinking Water Ordinance or the European standard EN 806) and technical rules (e.g. the German VDI 6022) subject to the respective specifications and fields of application.

## Protection against germs by means of Grünbeck's hygiene technology

This is a physical process – without any addition of chemicals into the drinking water – where the hygiene unit removes pathogenic germs such as legionella bacteria and pseudomonads from the drinking water without adding any chemicals to the drinking water. The germs retained by the hygiene membrane are killed at regular intervals by means of disinfection.

(For an illustration of the process, please refer to page 48.)

## UV light

The devitalising effect of the UV light (**violIQ:UV systems**) is due to the application of a special kind of lamp whose light – similar to sunlight – destroys organic cells.

- **violIQ:UV systems** (for residential and industrial applications)
- Elimination of legionellae
- Combined process of air washer and disinfection (**GENO-LUWADES<sub>2</sub>**)

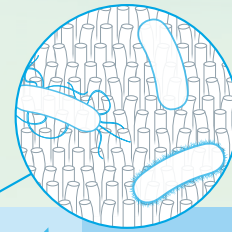
## Dosing of disinfectants

In order to eliminate pathogens, liquid disinfectants are dosed by means of volume-controlled dosing pumps. There is the option of adding a ready-made dosing solution (**GENO-Chlor A**), a dosing solution prepared on site (**GENO-Bakttox**) or a continuously generated disinfection solution (chlorine dioxide).

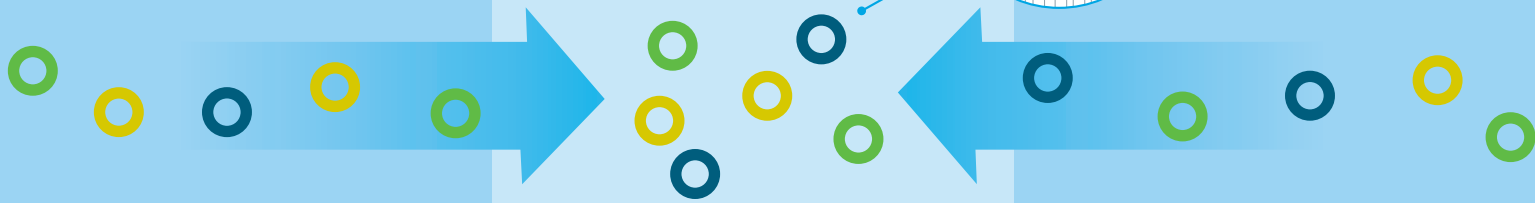
- Dosing of **GENO-Chlor A** (**GENODOS DM-T**)
- Dosing of **GENO-Bakttox** (**GENODOS DM-B/BO**)
- Generation and dosing of chlorine dioxide (**GENO-Bakttox MRX/RX/X**)

### Step 1: Fixation

The hygiene membrane retains pathogenic germs permanently.



Fixation on hygiene membrane



### Step 2: Disinfection

Pathogenic germs are rendered harmless

○ Legionella    ○ Pseudomonads    ○ E. coli

Disinfection flushing



Disinfection flushing

*Working principle of Grünbeck's hygiene technology*

### Working principle of Grünbeck's hygiene technology

The hygiene system **safeliQ:B30** works according to the principle of physical adsorption.

The special surface of the hygiene material causes germs, such as legionella bacteria, E.coli or pseudomonads, to stick to it. Following their fixation on the surface of the hygiene material, they are rendered harmless at regular intervals by means of disinfection with chlorine. Contrary to common systems, micro-biological impurities are thus effectively removed from the drinking water system, even in case of high demands of cold and hot water. This process works regardless of the flow direction and also ensures the bacteria's adhesion if the flow direction of the water is reversed.

### Reasons for the installation of an hygiene system

Due to a germ reduction of 99.99 %, the process stands for water hygiene and safety. The **safeliQ** system offers this kind of protection even in cases where the water supplier's multi-barrier system no longer can influence the hygienic safety of the drinking water, for instance in the event of accidents or emergencies.

It is particularly suited for sensitive environments such as hospitals, nursing homes or public facilities to ensure reliable prophylactic protection against germs.

Combined to a multi-barrier system, Grünbeck's hygiene technology can be effective at the water inlet but also in the circulation or at the withdrawal points. In this case, the **safeliQ:EB30** component is to be installed at the water's point of entry to the house. For the special requirements that sensitive environments might call for, Grünbeck develops individual solutions throughout all the various project phases – from analysis and problem definition up to completion – and while doing so, takes into consideration the specifics about hygiene.





Hygiene system safeliQ:EB30

## Hygiene system safeliQ:EB30

Hygiene system for prophylactic protection against germs. Twin system with two hygiene elements and requiring little floor space. Intelligent control unit with very low power consumption, colour display and guided start-up program. Technical component can be detached for easy, clean and hygienic maintenance. Lid with Soft-Close function for gentle closing. Wi-Fi interface and control via myGrünbeck app. Voltage-free fault signal output and programmable digital input. Disinfection unit, connection block with water meter screw connections, non-return valve, two shut-off valves, two flame-sterilisable sampling valves for untreated and treated water, flexible connection hoses. Indication of salt supply for continuous monitoring and early warning as well as illuminated LED ring as a visual signal and for the illumination of the brine tank's interior. The new additional function flushing+ can be set to an individual time and offers an even better drinking water quality. The hygiene elements must be replaced at regular intervals. Drain connection DN 50 according to DIN EN 1717 included in the scope of supply.

**Note:** The hygiene system safeliQ:EB30 is not suitable for use in private water supply.

### Specifications

- Dimensions (w x h x d) 525 x 912 x 580 mm
- Max. water/ambient temperature 30/40 °C
- Power supply 85 - 265 V, 50/60 Hz
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 8.0 bar

Hygiene system	safeliQ:EB30 <sup>1</sup>
Nominal flow at a pressure loss of 1.0 bar [m³/h]	3.0
Recommended interval for replacement of hygiene elements:	
after max. ... years at the latest	2
after a max. service of ... [m³]	250
Regeneration salt supply [kg]	95
Size of connection block ["]	1
Installation length without screw connection [mm]	190
Installation length with screw connection [mm]	271
<b>Order no. (RG-A)</b>	<b>525 410</b>

<sup>1</sup> Proof of the protection against germ growth verified by TZW: DVGW-Technologiezentrum Wasser (German DVGW Technology Centre for Water)

• **Accessories:** Please refer to pages 22, 29 and 39.

Hygiene and Disinfection  
Private Water Supply



Your advantage:  
Extension of warranty  
by 12 months when you  
register your product

#### Specifications

- Max. service life of lamp 16,000 h
- Spectral attenuation coefficient  $SSK_{254}$  max.  $3.2 \text{ m}^{-1}$
- Max. operating pressure 10.0 bar
- Power supply 230 V, 50 Hz



Sales only  
after consultation  
with Grünbeck.  
**Water analysis  
required!**



Disinfection system violiQ:UV

### Disinfection systems violiQ:UV “Drinking water version”

For disinfection of clear drinking water which is free of turbidities, iron and manganese and that only carries a slight microbiological load, for application in households and private water supply systems. These systems are DVGW-certified in accordance with DIN 19294-1 which is applicable in this sector.

**Scope of supply:** stainless steel reactor with high-intensity UV lamp, 2 flushing/drainage valves, 2 water meter screw connections, flow restrictor, safety valve included in the scope of supply, calibrated UV-C system sensor as per DVGW W 294-3. Protective quartz pipe, control unit **violiQ:UV** with operating hour meter and switch-on counter, indication of the irradiation intensity in  $\text{W/m}^2$ , power output for connection of an optional safety valve (required for a DVGW-compliant operation of the UV system) as well as an optional temperature-controlled flushing device.

Disinfection system	violiQ:UV20	violiQ:UV66	violiQ:UV85
Nominal connection diameter [R]	1"	1½"	2"
Installation position	horizontal, outlet at the top, self-deaerating		
Max. flow at 5 - 30 °C [ $\text{m}^3/\text{h}$ ]	2.0	6.6	8.5
Inlet water temperature [°C]	5 - 70	5 - 70	5 - 70
Ambient temperature [°C]	5 - 40	5 - 40	5 - 40
Connected load [VA]	75	145	215
Total length incl. screw connection [mm]	795	1,185	1,430
<b>Order no. (RG-B)</b>	<b>523000010000</b>	<b>523000030000</b>	<b>523000040000</b>

Accessories	Order no. (RG-B)
Temperature-controlled flushing for violiQ:UV	523 825
Stainless steel connection kit 1" for UV systems	520 070
Stainless steel connection kit 2" for UV systems	520 075
Wall bracket for UV systems (violiQ:UV, GENO-UV, KWA)	523 800
Floor rack for violiQ:UV20, UV33 DVGW//KWA	523 815
Floor rack for violiQ:UV66, UV80 DVGW//KWA	523 805
Floor rack for violiQ:UV85, UV120 DVGW//KWA	523 810
USB data logger for violiQ:UV	523830010000
Flushing kit for cleaning UV systems with GENO-clean CP	520 020
Cleaning agent GENO-clean CP (10 x 1 litre)	170 022

Please inquire  
about **additional  
UV systems** for special  
applications – **ex works  
and ready for  
connection!**



## Dosing systems GENODOS DM-T

For flow-dependent dosing of GENO-Chlor A from transportation canisters or dosing tanks for the disinfection of drinking water and industrial water.

Low-noise dosing pump 1/40 4G as self-priming and continuously adjustable diaphragm pump automatically deaerating against pressure, with pump head made of chemical-resistant plastic, synchronous motor, with fixing bracket for wall or floor mounting, with connection options for control via external pulse, empty signal with pre-alarm, function control including voltage-free fault signal output. Contact water meter with pulse cable to the pump electronics, including water meter screw connections or flanges, dosing group 2.70 made of PVC with non-return valve, pressure maintaining valve DHV 4, factory-set to 4 bar, dosing line made of PTFE.

- PVC suction lance for transportation canisters (DM-T 6 and DM-T 10)
- Dosing tank 60 litres (black) with suction lance (DM-T 20 and DM-T 30)
- Dosing tank 200 litres (black) with suction lance (DM-T 80 and DM-T 100)

### Specifications

- Nominal pressure PN 10
- Temperature min. 5 °C - max. 30 °C
- Power supply 230 V, 50/60 Hz, 18/21 W

Hygiene and Disinfection  
Private Water Supply

Dosing system GENODOS	DM-T 6	DM-T 10	DM-T 20	DM-T 30	DM-T 80	DM-T 100
Water meter <sup>1</sup>	R 1"	R 1¼"	R 1½"	R 2"	DN 80	DN 100
Max. operating range [m³/h]	6	10	20	30	80	100
Pressure loss at max. flow [bar]	0.5	0.5	0.8	0.8	0.6	0.8
Tank volume [litres]	20	20	60	60	200	200
Order no. (RG-B)	163 140	163 150	163 160	163 170	163 180	163 190

<sup>1</sup> With contactor as submerged type.

Disinfectant	Order no. (RG-B)
GENO-Chlor A (20 litres) for all pipes, except for stainless steel <sup>2</sup>	210 012
Accessories	Order no. (RG-B)
PVC dosing group 2.72 with non-return valve and ball valve	163 220
Water test kit for chlorine and pH value (measuring range chlorine: 0.1 - 2.0 mg/l; pH: 6.9 - 8.2)	170 128
Chemical spill tray for 20 l canisters	210 560
Chemical spill tray for 60/100 l dosing tanks	163 805

<sup>2</sup> Sufficient for the treatment of approx. 3,000 m³ of water (dosing volume 1.0 mg/l)



## Dosing systems GENO-Baktox

For temporary continuous disinfection of drinking and industrial water by means of chlorine dioxide.

Self-priming diaphragm dosing pump, automatically deaerating against pressure, continuously adjustable, with synchronous motor; with connection options for empty signal, external control and voltage-free fault signal output; pump factory-set and under seal; contact water meter with pulse cable and pulse division for **GENODOS-pump** and dosing valve; gas-tight suction lance with integrated pre-alarm and empty signal, pressure maintaining valve.

### Calculation of the estimated coverage of the disinfectant

1 litre of **GENO-Baktox** is sufficient for

- a water volume of 10 m<sup>3</sup> in case of standard dosing (DM-B, DM-BO)
- a water volume of 1 m<sup>3</sup> in case of sanitising dosing (MOBIdos)

## Dosing systems GENODOS DM-B

Dosing system DM-B 6 pre-assembled on mounting plate, dosing systems DM-B 10 - 30 consisting of individual components.

### Specifications

- Power supply 230 V, 50/60 Hz
- Water temperature 5 - 30 °C
- Ambient temperature 5 - 20 °C  
(in case of ambient temperatures of > 20 °C, the service life of the disinfectant is considerably shorter)
- Nominal pressure PN 8
- Factory setting of pressure maintaining valve: 4 bar

Dosing system	GENODOS DM-B			
	6	10	20	30
Nominal connection diameter [R]	1"	1¼"	1½"	2"
Nominal flow $Q_N$ [m³/h]	3	5	10	15
Flow $Q_{max}$ [m³/h]	6	10	20	30
Pressure loss at $Q_{max}$ [bar]	0.5	0.5	0.7	0.8
Order no. (RG-B) <sup>1</sup>	163 820	163 825	163 830	163 835

Accessories	Order no. (RG-B)
Chlorine dioxide test 0.02 - 0.55 mg/l	170 430
Chemical spill tray for 20 l canisters	210 560
M-Bus measuring transducer D-DAM, complete	115 850

<sup>1</sup> GENO-Baktox as well as water test kit not included in scope of supply.

• For disinfectants, please refer to page 53.

• For dosing system GENODOS type DM-B 6 (order no. 163 820), only 3-litre canisters are suitable.



Dosing system MOBIdos



Disinfectants

## Dosing system MOBIdos

**Independent, compact system for mobile drinking water disinfection by means of hydrogen peroxide, chlorine dioxide or chlorine.**

The mobile disinfection system MOBIdos is suitable for the disinfection of drinking water installations as per DIN EN 806-4 and DVGW worksheet W 557.

Due to its compact dimensions and low weight, the system is easy to transport and can be applied quickly and flexibly. Thanks to the system separator BA and the contact water meter included in the scope of supply, the dosing system is completely ready for connection. Volume-proportional dosing of the desired disinfectants and the integrated monitoring of the filling level ensure safe and reliable system operation. The dosing system is suitable for the disinfectants GENO-perox, GENO-Baktex and GENO-Chlor A and thus is suitable for all applications.

### Dosing system MOBIdos

Nominal flow $Q_N$ [m³/h]	5
Power supply [V/Hz]	230/50
Nominal connection diameter [G]	1"
Dimensions (w x h x d) [mm]	600 x 340 x 400
<b>Order no. (RG-B)</b>	<b>160 150</b>

### Disinfectants and accessories

Disinfectants and accessories	Order no. (RG-B)
GENO-Baktex (3 litres)	170 450
GENO-Baktex (10 kg)	170 460
GENO-Baktex (20 kg)	170 470
GENO-Chlor A (25 kg)	210 012
GENO-perox (1 litre)	170 320
GENO-perox (11 kg)	170 335
Hydrogen peroxide spray	156 868
Chlorine dioxide test 0.02 - 0.55 mg/l (300 analyses)	170 430
Digital test device Scuba II	211 235
Indicator for Scuba II, DPD1 (100 tablets)	211 213
Sodium metabisulphite (5 kg)	170 306
Water test kit for chlorine and pH value 0.1 - 2.0 mg/l, 6.9 - 8.2	170 128
Water test kit for chlorine, 10 - 160 mg/l (20 analyses)	170 138
Water test kit for peroxide, 50 - 1,000 mg/l (100 determinations)	170 167
Water test kit for peroxide 0.5 - 25 mg/l (100 test strips)	170 136
Hose extension kit for flushing compressor/MOBIdos	151 820

· For systems for continuous disinfection in drinking water systems by means of UV systems, please refer to page 50.

**Note:** For an effective disinfection performance, the **GENO-Baktex** solution prepared should be used up within 2 months.

Hygiene and Disinfection  
Private Water Supply

# Water treatment for private water supply

*Nowadays, water treatment is gaining more and more importance. Large water supply companies are installing expensive measuring and control technology. In the comparatively small systems for a private water supply, other processes must be used in order to make the water treatment cost-effective.*

## **Reduction of nitrate**

By nature, the nitrate concentration in ground water is not very high. However, in territories with intensive agricultural manuring, nitrate values of > 50 mg/l can be found. In order to reduce the nitrate concentration of well or ground water to the drinking water limit value, ion exchange systems are commonly used. In this process, nitrate is replaced by chloride (similar to the softening process where calcium and magnesium are replaced by sodium). As soon as the ion exchange material is exhausted, a fully automatic regeneration process takes place. Thereby the nitrate ions are washed out and flow into the drain, and the resin is re-loaded with chloride ions. The systems are regenerated by means of sodium chloride.

## **Deacidification**

Depending on the soil the water flows through, ground or well water can have a very low pH value (which can even be lower than the limit value for drinking water of 6.5) and therefore it reacts acidic. These low pH values are caused by an excess of free carbon dioxide. From the hygienic point of view and with regard to health, such acid water can be consumed without objections. For technical applications, however, the water must be deacidified. The corrosion

behavior of acid water, in particular, is considerable and this kind of water will damage any metal installation in the long run. In case of soft and acid water, deacidification in small systems is carried out by means of reaction filtration with calcium carbonate.

## **Deferrisation/Demanganisation**

Ground water containing iron and manganese has a brown, unappetising colour. It leaves brown, hardly removable stains on the sanitary installations and discolours clothes. In ground water, iron and manganese mostly occur in bivalent, soluble form. During treatment they must be oxidised to trivalent iron and tetravalent manganese in order to be able to filtrate them as iron-III-hydroxide and as manganese dioxide. Optimum pH values and sufficient oxidants must be available so that this reaction can take place.

A frequently used process for deferrisation and demanganisation – mainly in small systems – is the utilisation of potassium permanganate for oxidation. However, the required pH value needs to be considered. For an optimum reduction of iron, a pH value > 7.0 is required; for the reduction of manganese, a pH value > 7.2.



Nitrate filter WINNI-mat VGX-N 50<sup>1</sup>



Nitrate filter WINNI-mat VGX-N 400<sup>1</sup>

## Nitrate filter WINNI-mat VGX-N

**Compact, volume-controlled single system for nitrate reduction in cold drinking water.**

Compact PE housing with filling opening, safety overflow, brine tank and brine valve, pressure vessel with ion exchanger material and distribution system, control valve with ceramic discs and integrated contact water meter, electronics with microprocessor controller, operating keys, digital display and voltage-free fault signal output. In case of **VGX-N 400** and **VGX-N 650**, the salt dissolving tank can be detached from the exchanger tank and controller for maintenance work.

Furthermore, a connection block R1" with water meter screw connections, non-return valve, overflow valve, blending valve, two shut-off valves (bypass), as well as two flexible connection hoses to the system and a water test kit for the determination of nitrate are included in the scope of supply.

### Specifications

- Connection block – installation length without water meter screw connections 190 mm
- Max. water/ambient temperature 30/40 °C
- Power supply 230 V, 50/60 Hz
- Nominal pressure PN 10
- Operating pressure min. 2.0 bar/max. 8.0 bar
- Max. pressure loss 0.8 bar at nominal flow

Nitrate filter WINNI-mat VGX-N	50	400	650
Nominal connection diameter [R]	1"	1"	1"
Nominal flow [m³/h]	1.3	1.3	1.5
Nominal capacity nitrate [mol]	0.8	6.5	10.5
Nominal capacity nitrate [g x m³]	50	400	650
Regeneration salt supply [kg]	38	90	90
<b>Order no. (RG-B)</b>	<b>188 140</b>	<b>188 450</b>	<b>188 460</b>

Accessories	Order no. (RG-A)
Drain connection DN 50 with siphon acc. to DIN EN 1717	<b>188 875</b>

<sup>1</sup> The drain connection is not included in the scope of supply.

Hygiene and Disinfection  
Private Water Supply



Sales only  
after consultation  
with Grünbeck.  
**Water analysis  
required!**

#### Specifications

- Power supply 230 V, 50 Hz
- Operating pressure min. 2.5 bar/max. 6.0 bar
- Nominal pressure PN 10
- Max. water temperature 30 °C
- Nominal connection diameter  
Type 20/10 - 30/14: R 1" male thread;  
Type 40/17 - 60/20: R 1½" female thread

GENO-mat KF-Z

### Filter systems GENO-mat KF-Z/MS-Z/AK-Z

GENO-mat filter systems are used if filtration by means of a cartridge filter or a backwash filter is impossible due to a particularly high degree of pollution.

#### Range of application

- Gravel filter (quartz gravel) in case of mechanical impurities (KF-Z)
- Multi-layer filtration for increased efficiency (MS-Z)
- Dechlorination, odour and taste improvement by means of activated carbon (AK-Z)

#### System description

- Plastic filter tank with internal distribution system
- Filter filling: quartz gravel in various grain sizes (KF-Z), quartz gravel and hydroanthrasite (MS-Z), quartz gravel and activated carbon (AK-Z)
- Central control valve with operation and backwash function, including timer control and power supply cable

GENO-mat KF-Z	20/10	25/13	30/14	40/17	40/18	50/19	60/20
Max. nominal flow [m³/h]	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Quartz gravel [kg] <sup>1</sup>	33	75	108	148	200	311	390
Order no. (RG-B)	129 500	129 505	129 510	129 515	129 520	129 525	129 530

GENO-mat MS-Z	20/10	25/13	30/14	40/17	40/18	50/19	60/20
Max. nominal flow [m³/h]	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Quartz gravel [kg] <sup>1</sup>	17	40	70	112	110	247	367
Hydroanthrasite [l]	8	18	26	24	64	50	78
Order no. (RG-B)	129 550	129 555	129 560	129 565	129 570	129 575	129 580

GENO-mat AK-Z	20/10	25/13	30/14	40/17	40/18	50/19	60/20
Max. nominal flow [m³/h]	0.25	0.5	1.0	1.2	1.5	2.0	3.0
Quartz gravel [kg] <sup>1</sup>	9	15	20	20	20	30	30
Activated carbon [kg]	10	16	25	40	50	90	140
Order no. (RG-B)	129 800	129 805	129 810	129 815	129 820	129 825	129 830

<sup>1</sup> In various grain sizes.

• Regarding consumables for filter systems, please refer to page 57.

Sales only  
after consultation  
with Grünbeck.  
**Water analysis  
required!**



#### Specifications

- Power supply 230 V, 50 Hz
- Operating pressure min. 2.5 bar/max. 6.0 bar
- Nominal pressure PN 10
- Max. water temperature 30 °C
- Nominal connection diameter  
Type 20/10 - 30/14: R 1" male thread;  
Type 40/17 - 60/20: R 1½" female thread

GENO-mat TE-Z

## Deacidification systems GENO-mat TE-Z

Filter systems **GENO-mat TE-Z** are used for partial deacidification and to increase the total alkalinity in case of soft and acid water. Binding free carbon dioxide increases the pH value. The filter systems can be used up to a total alkalinity of  $\leq 1.0 \text{ mol/m}^3$  and a carbon dioxide concentration of  $\leq 35 \text{ mg/l}$ .

#### System description

- Plastic filter tank with internal distribution system
- Filter filling: Hydrolit-Ca with support layer
- Central control valve with operation and backwash function, including timer control and power supply cable

GENO-mat TE-Z	20/10	25/13	30/14	40/17	40/18	50/19	60/20
Nominal con. diameter [R]	1"	1"	1"	1½"	1½"	1½"	1½"
Max. nominal flow [m³/h]	0.5	1.0	1.5	2.0	2.5	3.0	4.0
Tank diameter [mm]	210	260	340	370	420	550	620
Total height of system [mm]	1,360	1,620	1,620	1,900	1,900	1,870	2,100
Quartz gravel [kg]	9	15	20	20	20	30	30
Hydrolit-Ca [kg]	20	25	70	90	120	220	320
<b>Order no. (RG-B)</b>	<b>129 850</b>	<b>129 855</b>	<b>129 860</b>	<b>129 865</b>	<b>129 870</b>	<b>129 875</b>	<b>129 880</b>

Consumables for filter systems	Order no. (RG-B)
Quartz gravel 3.15 - 5.6 (all filter systems)   25 kg bag	170 208
Quartz sand 1.0 - 2.2 (KF-Z / MS-Z)   25 kg bag	170 207
Filter sand 0.4 - 0.8 (KF-Z)   25 kg bag	170 205
Hydroanthrasite (MS-Z)   50 litre container (approx. 25 kg)	170 220
Activated carbon (AK-Z)   20 kg bag	170 253
Hydrolit-Ca (TE-Z)   25 kg bag	170 230

Hygiene and Disinfection  
Private Water Supply

**Sales only**  
**after consultation with**  
**Grünbeck.** Water analysis required  
 for the technical process design. If  
 operation conforms to specification, iron  
 values of max. 3 mg/l can be reduced to  
 less than 0.1 mg/l and manganese  
 values of max. 1 mg/l can be  
 reduced to less than  
 0.05 mg/l.



#### Specifications

- Power supply 230 V, 50 Hz
- Operating pressure min. 2.5 bar/max. 6.0 bar
- Nominal pressure PN 10
- Max. water temperature 30 °C
- Nominal connection diameter  
 Type 20/10 - 30/14: R 1" male thread;  
 Type 40/17 - 60/20: R 1½" female thread

GENO-mat MN-Z with regeneration tank as accessory

## Deferrisation/Demanganisation systems

Fully automatic filter system to reduce dissolved and undissolved iron/manganese in private water supply systems. Complete system with plastic ion exchanger tank including built-in components, filling of high-grade, special filter material, control head made of red brass with electromechanical actuator and timer control, water test kit for manganese.

### Deferrisation/Demanganisation systems GENO-mat MN-Z

- Special filter material GENO-Fermanit
- Dosing an oxidant is obligatory for demanganisation

MN-Z type	20/10	25/13	30/14	40/17	40/18	50/19	60/20
Nominal con. diameter [R]	1"	1"	1"	1½"	1½"	1½"	1½"
Nominal flow [m³/h] <sup>1</sup>	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Max. daily capacity [m³] <sup>1</sup>	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Regeneration agent required (quantity to be prepared) [l/reg.]	30	50	60	100	100	200	300
Backwash capacity [m³/h]	1.6	2.3	2.3	3.4	3.4	5.7	5.7
Tank diameter [mm]	210	260	340	370	420	550	620
Total height of system [mm]	1,360	1,620	1,620	1,900	1,900	1,870	2,100
<b>Order no. (RG-B)</b>	<b>153 410</b>	<b>153 420</b>	<b>153 430</b>	<b>153 440</b>	<b>153 450</b>	<b>153 460</b>	<b>153 470</b>

Accessories/Consumables	Order no. (RG-B)
Connection kit 1"-I	185 505
Connection kit 1½"-I (starting from type 40/17)	185 540
Regeneration tank 100 l <sup>2</sup>	153 094
Regeneration tank 300 l <sup>2</sup>	153 095
Water test kit for iron 0 - 0.8 mg/l and 1 - 10 mg/l (30 determinations)	170 150
Water test kit for manganese 0.03 - 0.5 mg/l (100 determinations)	170 097
Refill pack of reagents for water test kit for manganese (100 determinations)	170 193
GENO-oxi plus 20 kg (standard)	170 029
GENO-special granulate 1 kg <sup>3</sup>	170 016
GENO-special granulate 5 kg <sup>3</sup>	170 017
Potassium permanganate 5 kg (standard) <sup>3</sup>	170 041

<sup>1</sup> Depending on the iron and manganese concentration.

<sup>2</sup> For the regeneration of deferrisation systems/demanganisation systems

<sup>3</sup> Has to be registered with the Federal Opium Authorities acc. to the law on the monitoring of basic elements (for consumption amounts of more than 100 kg/year).



GENODOS DM-oxi 1"

## Dosing systems GENODOS DM-oxi

For dosing GENO-oxi plus.

**Consisting of:** dosing pump GP-/40, contact water meter, suction lance for 20 kg transportation dosing container, dosing valve 4/6 and 4 m dosing line.

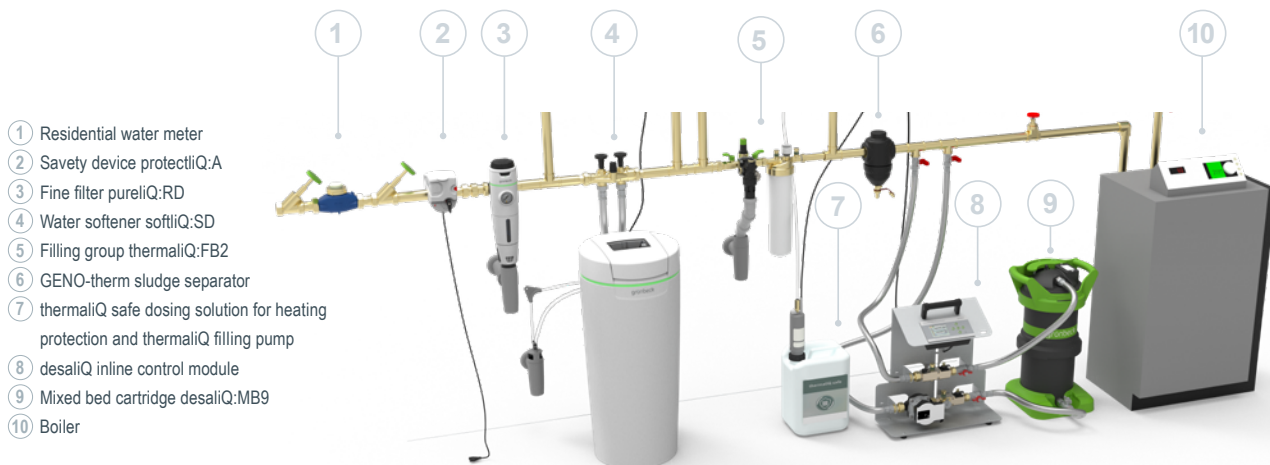
Dosing system GENODOS	DM-oxi 1"	DM-oxi 1½"
Dosing pump GP type	2/40	6/40
Flow $Q_{max}$ [m³/h]	6.0	20.0
Pulse sequence [l/pulse]	0.33	0.25
Delivery rate (2 bar counter-pressure) [l/h]	2.3	7.1
Delivery rate (6 bar counter-pressure) [l/h]	2.2	6.4
Max. water pressure [bar]	10	8
Max. water temperature [°C]	30	30
Power supply [V/Hz]	230/50	230/50
Order no. (RG-B)	163 420	163 430

Dosing agent	Order no. (RG-B)
GENO-oxi plus 20 kg (standard)	170 029

Accessories	Order no. (RG-B)
Overflow valve GENODOS DM-oxi 1", 1½"	163 790
Dosing point for filter systems up to type 30/14	163 860
Dosing point for filter systems starting from type 40/17	163 880
Chemical spill tray for 20 l canisters	210 560

Hygiene and Disinfection  
Private Water Supply

# Heating water



## Heating water

Varying technical rules and regulations have made a mystery of the topic "heating water treatment" and the considerable demands, the boiler manufacturers are placing on the executing craftsmen, represent an additional challenge. Modern materials, complex components and a compact design with small pipe cross-sections extremely increase the demands on the filling water. Heating systems – no matter whether oil, gas or pellets – can only work effectively if their efficiency is not reduced by deposits.

The solution is quite simple: **The 2-component system by Grünbeck** ensures the easy and efficient protection of the heating system.

For an optimum protection against corrosion and a reliable setting of the pH value without an additional check after 8 - 12 weeks, Grünbeck recommends using fully demineralised water – generated by means of the mixed bed cartridge **desaliQ:MB** for initial fillings and make-up water feed – in combination with Grünbeck's **thermaliQ** safe dosing solution for heating protection.

**With Grünbeck's practice-oriented 2-component system, filling and protecting the heating system go hand in hand with each other – easily and reliably.**

## Grünbeck's products for heating protection – easy and reliable

**desaliQ** consistently focuses on fully demineralised water (demi water/low-salt operation). All demands stipulated in VDI 2035 as well as in the joint worksheet by the BDH (Federal Industrial Association of Germany – House, Energy and Environmental Technology) and the ZVSHK (Central Association of the German HVAC Trade) are being fulfilled.

**thermaliQ** offers the ideal products for efficiently cleaning and optimally protecting the heating system, ensuring easy application and safety for the craftsman.

Grünbeck's product range includes the filling group **thermaliQ** to secure the drinking water according to DIN EN 1717 and offers additional options for professionally filling the heating system by using a **desaliQ** filling or mixed bed cartridge as well as a mobile reverse osmosis system.

All Grünbeck products are perfectly harmonised with each other and bring clarity to heating water treatment.

## Overview on the easy and practical filling and make-up water feed of heating systems

### Step 1: Installation of a heating system – laying the groundwork for optimum heating water

- Installation of boiler and piping of the heating system as well as installation of Grünbeck's products:

**Filling group thermalIQ:SB13 and treatment group thermalIQ:HB2**

by the installer

### Step 2: Initial filling of the heating system with optimum demi water

- Connection of the mixed bed cartridge **desaliQ:MB9** to the **treatment group thermalIQ:HB2** or to the **desaliQ basic filling module**. To do so, the **desaliQ hose kit** is connected to the **desaliQ connection adapter**. Afterwards, the system is filled with demineralised water. Later on, the filling cartridge is used to carry out the make-up water feed.
- Along with the initial filling, Grünbeck recommends adding **thermaliQ safe** for corrosion protection and for stabilising the pH value.

→ No follow-up check required after 8 – 12 weeks. Annual measurement and check is sufficient.

### Step 3: Easy and practical make-up water feed with demi water

- The installer hands over the **filling cartridge desaliQ:HB2** to the end customer. The filling cartridge can be connected directly (without the need for an additional adapter) to the treatment group.
- Alternative option: make-up water feed by means of **filling cartridge desaliQ:HB4**: In order to replenish a larger amount of demineralised water (e.g. in case of large heating systems), **filling cartridge desaliQ:HB4** can be used. For connection to the treatment group, the **desaliQ bottle adapter** – which is available directly in combination with the cartridge – as well as the **desaliQ connection adapter** are required.



Heating Water  
Condensate Neutralisation

Accessories: For drain connection DN 50 with siphon according to DIN 1717, please refer to page 39.



Filling group thermalIQ:SB13



Filling section thermalIQ:FB2  
consisting of filling group and treatment group

### Filling group thermalIQ:SB13

To secure the drinking water as per DIN EN 1717 during the initial filling or make-up water feed of closed heating systems by preventing the water from flowing back from the heating system.

**Consisting of:** system separator BA with connected pressure reducer unit including pressure gauge (setting options for filling pressure: 0.5 – 4 bar; factory setting: 1.5 bar). The 360 degree rotatable system separator unit allows for horizontal or vertical installation in the pipe. Thanks to the rotatable flange, the system separator cartridge can be replaced quickly and easily, rendering maintenance convenient. A dirt trap on the inlet side as well as shut-off valves on the filling group's inlet and outlet side complete it. The filling group is fully pre-assembled and comes in a cardboard box.

### Treatment group thermalIQ:HB2

To fully demineralise water of drinking water quality for easy and quick initial filling and make-up water feed of closed heating systems.

**Consisting of:** shut-off valve, vent valves as well as a conductivity measuring cell to monitor the water quality. In case of a conductivity of less than 10  $\mu\text{S}/\text{cm}$ , the green light-emitting diode is flashing, between 10 – 50  $\mu\text{S}/\text{cm}$ , the yellow diode is flashing and starting from 50  $\mu\text{S}/\text{cm}$ , the red light-emitting diode indicates the required replacement of the full demineralisation unit. The filling cartridge desaliQ:HB2 is already included in the scope of supply. By way of the desaliQ connection adapter (see below), other Grünbeck mixed bed cartridges can easily be connected as well. The treatment group also is a retrofitting option for existing filling groups.

### Filling section thermalIQ:FB2 – consisting of filling group and treatment group

To fully demineralise water of drinking water quality for easy and quick initial filling and make-up water feed of closed heating systems.

**Consisting of:** filling group thermalIQ:SB13 and treatment group thermalIQ:HB2. Particularly convenient handling since the filling group not only features a conductivity measuring cell but a filling cartridge desaliQ:HB2 as well.

### Filling section thermalIQ:FB13i – heating water treatment for the industrial sector

For the treatment of heating water in the industrial sector, mostly in combination with conductivity meter GENO-Multi-LF. Combined with a desaliQ filling/mixed bed cartridge, it is used for the full demineralisation of water of drinking water quality for the easy and quick initial filling and make-up water feed of closed heating systems. **Consisting of:** filling group thermalIQ:SB13 and housing of treatment group, incl. desaliQ connection adapter as well as a water meter.

Technical specifications	Filling group thermalIQ:SB13	Treatment group thermalIQ:HB2	Filling section thermalIQ:FB2	Filling section thermalIQ:FB13i
Nominal connection diameter [DN]	15	15	15	15
Operating pressure [bar]	10	6	6	10
Nominal flow at 1.5 bar [ $\text{m}^3/\text{h}$ ]	1.3	–	–	–
Nominal flow (with cartridge) [ $\text{m}^3/\text{h}$ ]	–	0.2	0.2	–
Nominal flow (with adapter) [ $\text{m}^3/\text{h}$ ] <sup>1</sup>	–	2.5	1.3	1.3
Max. water temperature [°C]	30	30	30	30
Installation length with screw connections [mm]	210	265	375	510
without screw connections [mm]	150	160	315	454
Order no. (RG-B)	707 750	707 755	707 760	707 770

<sup>1</sup> Depending on the filling cartridge or mixed bed cartridge used.



Your advantage:  
Extension of warranty  
by 12 months when you  
register your product



Filling cartridge desaliQ:HB2



Filling cartridge desaliQ:HB4 with bottle adapter

### Filling cartridge desaliQ:HB

Cartridge for full demineralisation by means of mixed bed resin for connection to **treatment group thermalIQ:HB2** (refer to page 62), designed for the full demineralisation of water of drinking water quality or the residual demineralisation of partially demineralised water, e.g. for the initial filling of smaller heating systems or the make-up water feed in heating systems. For vertical installation only. The adapter is made of high-grade, dezincification-resistant brass.

### Filling cartridge desaliQ:HB2

Filling cartridge (including flow stabiliser) for the make-up water feed of smaller up to medium-sized heating systems with fully demineralised water. This filling cartridge can be directly connected to the **treatment group thermalIQ:HB2**.

### Filling cartridge desaliQ:HB4

Filling cartridge (including non-return valve and flow stabiliser) with **desaliQ bottle adapter** for direct connection to the **GENO-therm filling devices** and connection blocks. In case of connection to the **treatment group thermalIQ:HB2**, the **desaliQ connection adapter** is required in addition.

Filling cartridge desaliQ:HB	2	4 with bottle adapter	4 without bottle adapter
Nominal connection diameter of adapter	–	¾"	–
Capacity < 10 [µS/cm x m³]	25	80	80
Capacity < 50 [µS/cm x m³]	40	110	110
Nominal flow [m³/h]	0.2	0.4	0.4
Nominal pressure [PN]	6	6	6
Max. water temperature [°C]	30	30	30
Weight, resin included [kg]	0.9	4.5	4.5
Order no. (RG-B)	707 745	707 150	707 155

#### desaliQ connection adapter<sup>1</sup>

To connect the filling cartridge desaliQ:HB4 (with bottle adapter) as well as the desaliQ mixed bed cartridges to the treatment group or the filling section. The ¾" male thread at the connection adapter allows for convenient connection via the desaliQ hose kit.

#### Order no. (RG-B)

707 276

#### Accessories

Mixed bed resin for filling cartridge desaliQ:HB4  
desaliQ:HB4 bottle adapter  
desaliQ hose kit

#### Order no. (RG-B)

707 680  
707 127  
707 850

Heating Water  
Condensate Neutralisation



#### Sample calculation

- Conductivity of the raw water: 500 µS/cm
- Filling cartridge used: desaliQ:HB4
- $110/500 = 0.22 \text{ m}^3$  (equals 220 litres at 50 µS/cm) → 220 litres of fully demineralised water at switch-off point 50 µS/cm

<sup>1</sup> For an illustration of the desaliQ connection adapter, please refer to page 61.



Mixed bed cartridge desaliQ:MB9



desaliQ resin bag



desaliQ inline filter module

## Mixed bed cartridge desaliQ

**Hot water resistant desaliQ:MB9 for new fillings, make-up water feed and circulation water treatment during operation.**

Mixed bed ion exchanger system for full demineralisation of water of drinking water quality or for residual demineralisation of partially demineralised water. Particularly suitable for the initial filling or make-up water feed of heating systems as well as for full demineralisation of the heating circuit during heating operation. Thus, the desaliQ:MB9 is also suited for the rehabilitation of heating circuits in combination with the **desaliQ inline control module**. The cartridge is suitable for use with **desaliQ resin bags** for easy and quick replacement of the resin – even at the place of use. Cartridge made of plastic with low dead weight, carrying handles and easy cliQ-lock. Furthermore, a flow stabiliser as well as a measuring device to determine the conductivity are installed in the outlet.

## desaliQ inline filter module

**Hot water resistant filter module for the rehabilitation of heating and cooling circuits during operation.**

By means of a total of six filter elements with a pore size of 5 µm, the desaliQ inline filter module efficiently filters impurities from the water. Furthermore, the integrated high-performance magnet makes sure that metal and magnetic dirt particles are reliably removed from water. After the treatment, the magnetic separator can be cleaned quickly and easily, so that the filter module is ready for use again in no time at all. The filter module is used in the mixed bed cartridge desaliQ:MB9 in combination with the proven desaliQ resin bags, thus allowing simultaneous filtration and full demineralisation of the circulation water.

desaliQ: <sup>1</sup>	MB9
Nominal connection diameter	¾"
Resin bag of 6 litres	2
Capacity < 10 [µS/cm x m³]	320
Capacity < 50 [µS/cm x m³]	510
Nominal flow [m³/h]	0.9
Shipping weight [kg]	17
Max. water temperature [°C]	65
<b>Order no. (RG-A)</b>	<b>707455000000</b>

<sup>1</sup> desaliQ hose kit (order no. 707 850) for connection to the treatment group or the filling section in combination with the desaliQ connection adapter.

Accessories	Order no.	RG-
desaliQ resin bags (2 bags of 6 litres each)	<b>707 435</b>	A
desaliQ inline filter module	<b>707000010000</b>	B
desaliQ inline replacement filter elements (6 pcs)	<b>707000020000</b>	B



desaliQ inline control module



desaliQ basic filling module

### Tool for heating water treatment – desaliQ inline control module

Designed as a portable, ready-to-connect tool for filling new systems as well as for rehabilitation and partial flow demineralisation or partial flow softening of existing systems, consisting of:

- Circulation pump with high circulation capacity including non-return valve
- Two conductivity sensors to measure the pure and heating water as well as a flow sensor
- Intelligent control unit to monitor and control the treatment programs

Thanks to the desaliQ inline control module, closed heating and cooling circuits with a water temperature of up to 80 °C can be treated during full operation. The intelligent control unit is the core of the desaliQ inline control module and allows qualified specialists to easily and intuitively select the required type of treatment in various operating modes. All parameters and values are clearly shown on a large colour display. Thanks to the robust operating keys, the device meets all the requirements for reliable use on a construction site.

### Tool for initial filling – desaliQ basic filling module

For automatic filling of heating and cooling systems with fully demineralised water, consisting of:

- Solenoid valve to shut off the water flow at the end of capacity of the connected treatment cartridge
- Flow sensor and conductivity sensor
- Intelligent control unit to monitor and control the initial filling

The desaliQ basic filling module demonstrates its full power when filling the system with fully demineralised water. However, the versatile tool can also be used to fill systems with softened water. In this case, too, the program stored in the control unit monitors the capacity of the cartridge.

Heating Water  
Condensate Neutralisation

desaliQ	Inline control module	Basic filling module
Nominal connection diameter	¾"	¾"
Power supply [V]	230	230
Nominal pressure [PN]	6	6
Nominal flow [m³/h]	0.9	1.3
Weight [kg]	9.3	5.4
Max. water temperature [°C]	80	35
Order no. (RG-B)	707000030000	707000050000



*thermalIQ safe, 5 l; thermalIQ clean, 5 l*



*thermalIQ filling pump*

### thermalIQ dosing solution for heating protection

**thermalIQ safe** ensures the heating system's protection against corrosion and when used with fully demineralised water, stabilises the pH value in the range of 8.5.

If applied in rehabilitation processes, **thermalIQ clean** dissolves and detaches impurities and rust in the system. Thanks to its inhibitor component, **thermalIQ clean** ensures corrosion protection even during cleaning. We recommend filtering the circulation water during cleaning in order to immediately remove the dissolved impurities from the system. Both dosing solutions can be dosed into the system by means of the **thermalIQ filling pump**. The actual concentration of **thermalIQ safe** can be determined with the **thermalIQ safe test kit**.

thermalIQ	safe			clean		
Dosing [% by volume]	0.5			0.2 - 0.4		
pH value	8.5			8.5		
Optimum application temperature [°C]	10 - 100			10 - 100		
Canister [l]	1	5	10	1	5	10
Order no. (RG-A)	170 076	170 077	170 078	170 057	170 058	170 059

### thermalIQ filling pump

The **thermalIQ filling pump** is designed for easy and quick feed of **thermalIQ safe** und **thermalIQ clean** into the heating circuit. The **thermalIQ filling pump** can directly be screwed onto the 5 or 10 litre canisters. Connection to the heating system is made by a boiler fill and drain fitting. For easy transportation, the **thermalIQ filling pump** including accessories comes in a practical case.

thermalIQ filling pump	
Nominal connection diameter	3/4"
Hose connection [mm]	6
Power supply [V/Hz]	230/50
Protection	IP64
Max. delivery rate [l/h]	100
Dynamic pressure [bar]	8.8
Order no. (RG-A)	150 110

### thermalIQ safe test kit

By means of the **thermalIQ safe test kit**, the concentration of the heating protection inhibitor **thermalIQ safe** can be determined in the heating water. The case includes the required reagents, pipettes and measuring vessels.

thermalIQ safe test kit	Order no. (RG-A)
	170 504



Mixed bed cartridge desaliQ:BA6

## Mixed bed cartridge desaliQ:BA

Compact mixed bed ion exchanger system for the full demineralisation of water of drinking water quality or residual demineralisation of partially demineralised water, e.g. for the initial filling or make-up water feed of heating systems. Stainless steel cartridge with high-grade mixed bed resin, internal distribution system, plastic ring with carrying handles, plastic foot, with oval, clip-lock-type lid for easy replacement of the resin, flow stabiliser, vent valve, nominal connection diameter  $\frac{3}{4}$ ", nominal pressure PN 10, max. water temperature 80 °C.

desaliQ:BA <sup>1</sup>	6	12	13	16	20
Nominal connection diameter	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "
Capacity < 10 [ $\mu\text{S}/\text{cm} \times \text{m}^3$ ]	215	460	1,040	1,560	2,080
Capacity < 50 [ $\mu\text{S}/\text{cm} \times \text{m}^3$ ]	340	800	1,650	2,475	3,300
Nominal flow [ $\text{m}^3/\text{h}$ ]	0.6	1.2	1.3	1.6	2.0
Weight on delivery [kg]	12	23	48	68	89
Order no. (RG-B)	707 450	707 460	707 470	707 480	707 490

<sup>1</sup> For connection to the treatment group or filling group by means of desaliQ connection adapter, the desaliQ hose kit is required. Please refer to page 63.



### Sample calculation

- Conductivity of the raw water: 500  $\mu\text{S}/\text{cm}$
- Cartridge used: desaliQ:BA6
- $215/500 = 0.43 \text{ m}^3$  (equals 430 litres at 10  $\mu\text{S}/\text{cm}$ )
- $340/500 = 0.68 \text{ m}^3$  (equals 680 litres at 50  $\mu\text{S}/\text{cm}$ )

## Cartridge version VARIO mini to soften or fully demineralise heating water

In the circulation water treatment of heating water, the resin cannot be regenerated.

Cartridge version VARIO mini	Temperature resistance	Capacity	Order no. (RG-B)
<b>Softening cartridge version VARIO mini</b>			
desaliQ:BA12 VARIO mini	max. 80 °C	90 $\text{m}^3 \times \text{mmol/l}$ at < 0,02 mmol/l	707 765
desaliQ:BA16 VARIO mini <sup>2</sup>	max. 80 °C	180 $\text{m}^3 \times \text{mmol/l}$ at < 0,02 mmol/l	707 785
<b>Mixed bed cartridge version VARIO mini</b>			
desaliQ:BA12 VARIO mini	max. 80 °C	460 [ $\mu\text{S}/\text{cm} \times \text{m}^3$ ] < 10 $\mu\text{S}/\text{cm}$ or 800 [ $\mu\text{S}/\text{cm} \times \text{m}^3$ ] < 50 $\mu\text{S}/\text{cm}$	707 465
desaliQ:BA16 VARIO mini <sup>2</sup>	max. 80 °C	1,250 [ $\mu\text{S}/\text{cm} \times \text{m}^3$ ] < 10 $\mu\text{S}/\text{cm}$ or 1,615 [ $\mu\text{S}/\text{cm} \times \text{m}^3$ ] < 50 $\mu\text{S}/\text{cm}$	707 485

<sup>2</sup> Without oval clip-lock-type lid (threaded lid with removable riser pipe).

Heating Water  
Condensate Neutralisation

Only while  
stocks last



*GENO-therm analysis case including test kit for molybdenum*



*Digital hand-held measuring device for pH, conductivity and temperature*

## Always have the heating water perfectly under control

Measuring tools by Grünbeck

### GENO-therm analysis case

The GENO-therm cases have been thoroughly tried and tested and perfectly fit into the Sortimo in-vehicle equipment. They are, of course, compatible with all other products for heating protection in Grünbeck's product range. By means of the GENO-therm analysis case, the parameters for heating and feed water can be determined properly. The case contains test kits for total hardness, conductivity and pH value. For calibration and sampling purposes, the case also contains three test cups. Two versions (with and without test kit for molybdenum) of the analysis case are available. The test kit for molybdenum is designed to determine GENO-safe A.

### Digital hand-held measuring device

The allrounder for measuring the heating water. With the convenient hand-held measuring device, you can easily determine the pH value, the temperature as well as the conductivity of every water sample. This sturdy measuring device provides the specialist installer with a simple option for recording and documenting the water quality during maintenance or commissioning of a heating system.

Grünbeck measuring tools	Order no. (RG-B)
Analysis case (pH value + conductivity + molybdenum)	707 190
Analysis case (pH value + conductivity + total hardness)	707 192
Combined measuring device for pH and conductivity, complete	170000010000
Digital hand-held measuring device for pH, conductivity and temperature	170 185



Mobile reverse osmosis system AVRO-flex 400



GENO-therm sludge separator DN 20

## Mobile reverse osmosis system AVRO-flex 400

The mobile reverse osmosis system AVRO-flex 400 is designed for the direct filling of heating systems, district heating networks and other systems with low-salt water. Thanks to the patented AVRO-technology, a pretreatment by means of a water softener or an anti-scaling dosing is not required while the membranes used nevertheless have a long service life and a high recovery due to the innovative operating process. By means of a selector switch, the system can be put into two simple operating modes. In the filling mode, the system automatically switches off as soon as a certain counter-pressure is reached. In the unique "shop" mode, no extensive preservation efforts have to be made during periods of standstill thanks to regular rinsing procedures.

### Specifications

- Total salt concentration (NaCl) of feed water max. 1,000 ppm
- Salt rejection rate 95 - 99 %
- Max. counter-pressure of the system to be filled: 3.5 bar
- Inlet flow pressure of feed water at least 2.5 bar
- Feed water temperature min. 10 °C, max. 30 °C
- Protection class I
- Protection IP 54
- Power supply 230 V, 50 Hz

### Mobile reverse osmosis system AVRO-flex 400

Nominal connection diameter	¾" (DN 20) male thread and GEKA coupling
Permeate capacity at 10/15 °C [l/h]	340/400
Connected load [kW]	1.8
Operating weight, approx. [kg]	80
Dimensions (w x h x d) [mm]	700 x 1,450 x 600
Order no. (RG-B)	752 250

Heating Water  
Condensate Neutralisation

## GENO-therm sludge separator with magnet and insulating shell

To effectively separate particles and corrosion products from the heating water and thus reduce the system's wear and tear and the risk of clogging in system components such as valves and heat exchangers.

Thanks to the removable solenoid ring, the cut-off of ferrous impurities in particular is improved. By opening the ball valve, the deposited impurities can be discharged to the drain while the heating system is running. The use of a system separator improves the efficiency of the heating system.

GENO-therm sludge separator with magnet	DN 20	DN 25	DN 32	DN 40	DN 50
Connection diameter [female thread]	R ¾"	R 1"	R 1¼"	R 1½"	R 2"
Nominal pressure [PN]	10	10	10	10	10
Max. water temperature [°C]	110	110	110	110	110
Installation length [mm]	110	110	124	124	127
Total height [mm]	248	248	268	268	268
Order no. (RG-B)	707 705	707 710	707 715	707 720	707 725



*thermalIQ conductivity measuring cell with adapter*

Accessories	Order no.	(RG-)
Analogue water meter with connection material	702 845	B
System log for hot water heating systems	825 52 110	B
Double nipple 3/4"	707 124	B
Double screw connection 3/4"	100034360000	B
desaliQ:HB4 bottle adapter	707 127	B
thermalIQ conductivity measuring cell with adapter	707 015	B
thermalIQ conductivity measuring cell	707 025	B
desaliQ hose kit	707 850	B
GENO-dosing unit H 5	150 100	B
Conductivity meter GENO-Multi-LF (measuring range 0 - 99.9 µS/cm, incl. temp.)	702 842	B
Calibration solution for conductivity	203 624	B
Calibration solution pH 4	203 627	B
Calibration solution pH 7	203 628	B
Potassium chloride solution [3 mol/l]	203 631	B
Combined measuring device for pH and conductivity, complete	170000010000	B
Stainless steel solenoid valve (24 V/50 Hz)	707 055	B
Hose adapter to convert from a 3/4" male thread connection to quick-acting coupling	707 059e	B
Water test kit for pH value 7 - 14 <sup>1</sup> (100 test strips)	170 147	B
Water test kit for sulphite 10 - 1,000 mg/l <sup>1</sup> (100 test strips)	170 535	B
Water test kit for total hardness °dH and °f	170 187	B
Water test kit for molybdenum 5 - 250 mg/l <sup>1</sup> (100 determinations)	170 140	B
Refill kit of reagents for thermalIQ safe test kit	170 655e	A
Water softener HEH 9 <sup>2,3</sup>	190 570	
Refill exchanger resin (4 litres)	190 575	

<sup>1</sup> Measuring range

<sup>2</sup> Connection to treatment group thermalIQ:HB2 possible by means of desaliQ connection adapter (refer to page 62).

<sup>3</sup> In case of heating systems with aluminium components, we recommend full demineralisation and dosing thermalIQ safe.

Accessories for mobile/stationary GENO-VARIO mini	Order no. (RG-B)
<b>Hose kits DN 20, union nut 3/4", 1,5 m, 2 hoses, 2 double nipples, incl. seals</b>	
straight/straight	707 840
straight/90°	707 845
<b>Depth filter elements, 2 pcs in cardboard box</b>	
25 µm	707 570
50 µm	707 575
100 µm	707 580
150 µm	707 585

**Note:** Hose kits also suitable for desaliQ inline control module, desaliQ basic filling module and mixed bed cartridges desaliQ:BA/MB.

## Dosing agents

Product	Applications	Characteristics
<b>GENO-safe A full heating protection</b>	Warm water heating systems as per VDI 2035	Full heating protection for one-family and multi-family homes as well as industrial buildings. Combination product for hardness stabilisation and corrosion protection, suitable for all types of heating systems and materials. The required quantity is 1 litre for every 200 l of filling volume.
<b>GENO-heating protection FSK</b>	All heating system as well as cooling circuits, heat pumps and solar systems	Corrosion and anti-freeze protection as combined agent. Full corrosion and scaling protection is guaranteed if at least a minimum of 20 % of the system volume is added: <ul style="list-style-type: none"> <li>Starting from 22 % of the system volume up to -10 °C</li> <li>Starting from 35 % of the system volume up to -20 °C</li> </ul> In case of aluminium and aluminium components, a pH value of 8.2 - 9.0 has to be observed. Not suitable for application with tin, zinc or galvanised materials.
<b>GENO-phos Nr. 1</b>	Steam boiler systems and warm water heating systems as per VDI 2035 with metal pipes and radiators	Trisodium phosphate (granulate), precipitation of residual hardness, alkalisation by means of pH increase, preparation with soft water. In case of aluminium and aluminium components, a pH value of 8.2 - 9.0 has to be observed.
<b>GENO-phos Nr. 2</b>	Steam boiler systems where alkalinity is too high	Sodium dihydrogen phosphate (granulate), to reduce high alkalinity, pH reduction, precipitation of residual hardness.
<b>Sodium sulphite</b>	Steam boiler systems, warm water and hot water circuits	Oxygen binding agent (granulate), activated, for chemical oxygen binding in water, not steam-volatile, approved for steam boilers in food applications.
<b>Full heating protection</b>		<b>Order no. (RG-I)</b>
GENO-safe A, 1 litre		180 530
GENO-safe A, box 10 x 1 litre		180 540
GENO-safe A, canister 11 kg		180 550
<b>Full heating protection with anti-freeze protection</b>		<b>Order no. (RG-I)</b>
GENO-heating protection FSK (20 kg)		180 230
<b>Dosing agents to increase the pH value</b>		<b>Order no. (RG-B)</b>
GENO-phos Nr. 1 (granulate) [500 g]		170 001
GENO-phos Nr. 1 (granulate) [3.5 kg]		170 002
GENO-phos Nr. 1 (granulate) [25 kg]		170 052
GENO-SW 2010 (liquid) [20 kg]		180 415
GENO-SW 2010 (liquid) [100 kg]		180 420
<b>Dosing agents to decrease the pH value</b>		<b>Order no. (RG-B)</b>
GENO-phos Nr. 2 (granulate) [3.5 kg]		170 003
GENO-phos Nr. 2 (granulate) [25 kg]		170 053
<b>Dosing agents to bind oxygen</b>		<b>Order no. (RG-B)</b>
Sodium sulphite (granulate) [6 kg]		170 004
Sodium sulphite (granulate) [25 kg]		170 054
GENO-SW 2000 (liquid) [20 kg]		180 405
<b>Combined product to increase the pH value and to bind oxygen</b>		<b>Order no. (RG-B)</b>
GENO-SW 2040 (liquid) [25 kg]		180 440

**Recommended by Grünbeck:** The 2-component system **thermaliQ safe/clean** + fully demineralised water (refer to page 66)

Heating Water  
Condensate Neutralisation



GENO-Neutra FNH-420-R<sup>1</sup>

## Condensate neutralisation for gas and oil condensing boilers

according to DWA-A 251, DIN 4716-1, DVGW VP 114

The **GENO-Neutra FNH-420-R** system is designed for the neutralisation (increase of pH value to more than 6.5) of condensate from gas and oil condensing heat generators (condensing boilers) and/or flue gas systems made of aluminium, stainless steel, plastic, graphite, glass and ceramics. Via the condensate inlet filter, the condensate flows into the neutralisation box where it is circulated and where the pH value is increased by dosing neutralisation agents and monitored. When the admissible pH value (> 6.5) is reached, the condensate is pumped to the drain. The control unit **GENO-Neutra-matic** controls and monitors all major functions of the system. Amongst others, the pH value of the condensate, the levels and the current states of the outputs are indicated in the display of the **GENO-Neutra-matic**.

GENO-Neutra	FNH-420-R
Max. neutralisation capacity [l/h]	420
≙ Nominal capacity for condensing boilers with gas burning (at 0.14 l/kWh) max. [kW]	3,000
with oil burning (at 0.08 l/kWh) max. [kW]	5,250
Condensate temperature [°C]	5 - 40
Inlet/overflow/outlet hose [DN]	25/25/12
Height inlet/overflow connection [mm]	105
Delivery head of pump at 420 l/h [m]	3
Power supply [V/Hz]	2 x power cable 230/50
Neutralisation agent	GENO-Neutrox <sup>1</sup>
Order no. (RG-B)	410 540

Accessories	Order no. (RG-B)
Voltage-free level signal "pre-alarm" for GENODOS pump	163 870
Safety package for caustic substances: gloves, protective goggles, eye rinsing bottle, symbolic signs (warning against caustic substances, use gloves, use eye protection)	180 810
Condensate pre-filtration box with activated carbon filling w x h x l = 300 x 340 x 400 mm, hose connection DN 25	410 135
Oil binding mats (20 pcs), oil absorption 100 ml/mat, water-repellent	410 585
GENO-Neutrox, 25 kg	180 350
GENO-Neutrox, 75 kg <sup>2</sup>	180 355
GENODOS suction lance, 750 mm	118 505

<sup>1</sup> The neutralisation agent GENO-Neutrox is not included in the scope of supply.

<sup>2</sup> The GENODOS suction lance 750 mm (order no. 118 505) is required here.



GENO-Neutra KW65



GENO-Neutra NO-5



## Condensate neutralisation for gas and oil condensing boilers

according to DWA-A 251, DVGW VP 114 (subject to type)

These neutralisation systems are designed for the neutralisation (increase of pH value to more than 6.5) of condensate from gas or oil condensing heat generators and/or flue gas systems made of stainless steel, plastic, graphite, glass and ceramics. They each consist of: a plastic neutralisation box with integrated sedimentation zone for impurities, pH indicator strips, connection hose and connecting material.

### GENO-Neutra N-14, N-70, N-210

For flow-through neutralisation of condensate originating from gas condensing boilers (DVGW VP 114), initial filling of neutralisation granulate **GENO-Neutralit Hz**, N-210 in addition with variable adaption of filling volume to boiler capacity.

### GENO-Neutra NO-5, NO-12, NO-24

For flow-through neutralisation of condensate originating from oil condensing boilers. With additional regeneration system for neutralisation granulate, initial filling of activated carbon and neutralisation granulate **GENO-Neutralit Hz** (NO-5 with built-in siphon at the inlet connection). If direct draining of the waste water via a natural gradient is not feasible, the waste water lifting system AH-300 can be installed downstream of all systems.

### GENO-Neutra KW35, KW65

For flow-through neutralisation of condensate originating from gas-condensing boilers (DVGW VP 114). Initial filling of neutralisation granulate **GENO-Neutralit Hz**.

Heating Water  
Condensate Neutralisation

GENO-Neutra	KW35	KW65	N-14	N-70	N-210	NO-5	NO-12	NO-24
Gas condensate up to max. [l/h]	4.9	9.1	14	70	210	–	–	–
△ boiler capacity at 0.14 l/kW max. [kW]	35	65	100	500	1,500	–	–	–
Oil condensate up to max. [l/h]	–	–	–	–	–	4.4	12.8	25.6
△ boiler capacity at 0.08 l/kW max. [kW]	–	–	–	–	–	55	160	320
Power supply [V/Hz]	–	–	–	–	–	230/50	230/50	2 x 230/50
Condensate temperature [°C]	5 - 60	5 - 60	5 - 60	5 - 60	5 - 60	5 - 60	5 - 60	5 - 60
Inlet/outlet hose [DN]	20	20	20	20	25 <sup>1</sup>	20	20	20
Height of inlet/outlet [mm]	61	61	110	110	80	110	110	110
Condensate backwater level [mm]	90	90	120	120	90	120	120	120
Filling volume of GENO-Neutralit Hz [kg]	2.5	3.3	3	8	24	3	8	16
Order no. (RG-B)	410 335	410 345	410 440	410 450	410 320	410 230	410 240	410 250

<sup>1</sup> In addition, an inlet hose connection (DN 20) is included in the scope of supply.



GENO-Neutra NO-24



Waste water lifting system AH-300

## Accessories for condensate neutralisation

### Waste water lifting system AH-300

To convey neutralised condensate and condensate of gas condensing boilers with a pH value of > 3, clear water or slightly polluted industrial water. Not suitable for salt water (e.g. from water softeners) or water containing chlorine. Collecting container with inlet connection for hoses DN 20 and DN 25, level-controlled pump with filter basket, non-return valve and 6 m outlet hose DN 12, level switch with voltage-free change-over contact for fault signal (overflow warning).

#### Specifications

- Delivery head 4 m at 300 l/h
- Operating mode S1 (suitable for continuous operation)
- Power supply 230 V, 50 Hz, 0.33 A
- Height of inlet connection 50 mm
- Height of pump switch-on point approx. 80 mm
- Dimensions without hose connection (w x h x d) 300 x 270 x 400 mm

	Order no. (RG-B)
Waste water lifting system AH-300	420 150

Accessories for condensate neutralisation	for type	Order no. (RG-B)
Activated carbon filter GENO AF-5 <sup>1</sup>		410 435
Overflow alarm switch	N-14, N-70, N-210, NO-5, NO-12, NO-24 <sup>3</sup> , AF-5	410 680
Alarm delay <sup>2</sup>	N-14, N-70, N-210, NO-5, NO-12, NO-24 <sup>3</sup> , AF-5, AH-300	410 285
Maintenance kit (incl. GENO-Neutralit Hz)	N-14	410 801
Maintenance kit (incl. GENO-Neutralit Hz)	N-70	410 802
Maintenance kit (incl. GENO-Neutralit Hz)	N-210	410 803
Maintenance kit (incl. GENO-Neutralit Hz)	NO-5	410 805
Maintenance kit (incl. GENO-Neutralit Hz)	NO-12	410 806
Maintenance kit (incl. GENO-Neutralit Hz)	NO-24	410 807
Maintenance kit (incl. GENO-Neutralit Hz)	KW35	410 810
Maintenance kit (incl. GENO-Neutralit Hz)	KW65	410 830
Maintenance kit for activated carbon filter	AF-5	410 824
GENO-Neutralit Hz, 3 kg	Neutrabox GENO G-25, N-14, NO-5	410 770
GENO-Neutralit Hz, 8 kg	N-70, N-210, NH-140, NO-12, NO-24	410 011
GENO-Neutralit Hz, 25 kg	NH-140 and N-210	170 249
Neutralisation agent FNK, 20 kg (liquid)	FN 400 M	180 300
pH indicator strips 4.5 - 10 (3 pcs)	all types	170 173

<sup>1</sup> The activated carbon filter GENO AF-5 is suitable for the filtration of condensate originating from oil and gas burning heat generators (oil and gas condensing boilers) and/or their flue gas systems and can be used if there is no obligation to neutralise. It can also be used as a prefilter upstream of a neutralisation system.

<sup>2</sup> Only in combination with overflow alarm switch.

<sup>3</sup> For NO-24, two units are required.



Water test kit for total hardness °dH and °f

pH test strips

## Water test kits

Drinking water	Order no. (RG-B)
Water test kit for chlorine and pH value 0.1 - 2.0 mg/l, 6.9 - 8.2 <sup>1</sup>	170 128
Water test kit for total hardness °dH and °f	170 187
Water test kit for total alkalinity	170 169
Combined measuring device for pH and conductivity, complete	1700000010000
Water test kit for manganese 0.03 - 0.5 mg/l <sup>1</sup> (100 determinations)	170 097
Water test kit for iron 0.0 - 0.8 and 1 - 10 mg/l <sup>1</sup> (30 determinations)	170 150
Water test kit for nitrate 0.0 - 500 mg/l <sup>1</sup> (100 test strips)	170 131
Water test kit for peroxide 0.5 - 25 mg/l <sup>1</sup> (100 test strips)	170 136
Water test kit for pH value 4.5 - 10 <sup>1</sup> (100 test strips)	170 148

Heating water, boiler feed water	Order no. (RG-B)
Water test kit type CPM	170 540
Water test kit for total hardness type B (100 determinations)	170 149
Water test kit for total hardness GENO-plex B	170 121
Water test kit for ortho-phosphate 2 - 15 mg/l <sup>1</sup> (250 determinations)	170 103
Water test kit for ortho-phosphate 1 - 20 mg/l <sup>1</sup> (75 determinations)	170 554
Water test kit for pH value 4.5 - 10 <sup>1</sup> (100 test strips)	170 148
Water test kit for pH value 7 - 14 <sup>1</sup> (100 test strips)	170 147
Water test kit for pH value 0 - 6 / 4.5 - 10 / 7 - 14 <sup>1</sup> (3 boxes of 100 test strips each)	170 106
Water test kit for residual oxygen 0 - 100 ppb <sup>1</sup> (30 determinations)	170 144
Water test kit for sulphite 10 - 1000 mg/l <sup>1</sup> (100 test strips)	170 535
Water test kit for sulphite drip test 0.5 - 20 mg/l <sup>1</sup> (80 determinations)	170 107
Water test kit for GENO-heating protection FSK 1.00 - 1.10 g/cm <sup>3</sup> <sup>1</sup>	170 141
Water test kit for molybdenum 5 - 250 mg/l <sup>1</sup> (100 determinations)	170 140

Replacement reagents for phosphate and sulphite test kits	Order no. (RG-B)
Phosphate reagent I (250 ml, replacement reagent for order no. 170 103)	170 501
Phosphate reagent II (250 ml, replacement reagent for order no. 170 103)	170 502
Sulphite reagent 1/2/3 (large package 100/100/250 ml, replacement reagent for order no. 170 107)	170 525
Sulphite reagent 1/2/3 (small package 15/15/50 ml, replacement reagent for order no. 170 107)	170 520

<sup>1</sup> Measuring range



GENO-clean M, 12 kg

## Agents to remove scale and rust

For removal of tenacious scale and rust deposits, in particular in devices and components of drinking water installations (e.g. drinking water heaters) but also in pipes and built-in parts in cooling and industrial water circuits.

The cleaning agents produced on an acid base contain inhibitors harmonised with the field of application which ensure metal or material friendly cleaning. The selection of the respective product depends on the type of deposits to be removed and the materials contained in the water-carrying systems.

When carrying out the cleaning, we recommend circulating the cleaning agent in the system by means of an acid-proof pump. In case of **GENO-clean M** or **GENO-clean CP**, common flushing devices can be used as well.

**Note:** In dinking water pipes made of galvanised steel, flushing with acid-containing cleaning agents is not allowed as per the generally acknowledged rules of technology! (DVGW leaflets W 557 and W 558 (draft)).

Material of the components to be cleaned	Aluminium	Stainless steel	Grey cast iron	Copper or copper alloys	Steel	Acid-resistant plastic	Acid-resistant enamel	Zinc and zinc-coated materials	Applicability with GENO-flushing device	Max. operating temperature [°C]		
	Agents to remove scale and rust										Order no.	RG-
	•	•	•	•	•	•	•	■	•	40	170 045	B
	•	•	•	•	•	•	•	■	•	40	170 047	B
	■	•	■	•	■	•	•	■	•	40	170 022	B
	■	•	■	•	■	•	•	■	•	40	170 028	B
	■	•	•	•	•	•	•	•	•	40	170 015	I
	Neutralisation agent FNK, 20 kg									•	180 300	B
	Water test kit for pH value 4.5 - 10 (100 test strips)									•	170 148	B

<sup>1</sup> Strong and odourless acid, readily biodegradable, good compatibility of materials.

## Commissioning and maintenance when performed by Grünbeck's technical service

Grünbeck products are made of high-quality materials in order to ensure long, trouble-free operation. In order to guarantee the maximum process performance for many years after the installation, maintenance of the systems is required at regular intervals. With regard to residential applications, this is regulated by the DIN standard EN 806-5. A maintenance contract ensures the functionality of your system for many years beyond the warranty period. Maintenance work and supply of consumables, chemicals, etc. should be performed by authorised experts. Please inquire about commissioning and maintenance prices.

Devices, systems, services Designation	Commissioning Order no.	Maintenance Order no.
Travel expenses	943 905	943 905
<b>Filters</b>		
Cartridge filters up to 2"	943 101	942 101
Backwash filters BOXER, KICKER, pureliQ	943 103	942 103
Backwash filters up to 2"	943 105	942 105
Cartridge filters FME, FM DN 50 - DN 200	943 107	942 107
Backwash filters DN 65 - DN 100	943 108	942 108
Automatic backwash filters 1" - DN 100	943 109	942 109
<b>Dosing</b>		
Dosing computer EXADOS, exaliQ dosing system	943 114	942 114
Dosing with supply tank	943 115	942 115
Dosing systems GENODOS DM, DME, DM-T, DM-oxi	943 161	942 161
Dosing systems GENODOS DM-B, MOBIdos	943 162	942 162
Dosing systems GENODOS DM-BO	943 163	942 163
<b>Alternative anti-scaling</b>		
GENO-K4	943 157	942 803
<b>Water softeners with DVGW certification</b>		
softliQ:SC/SD	943 188	942 188
Single systems		942 120
softliQ:MC/MD/MD12i	943 387	942 387
softliQ:PB20	943 625	942 625
	<i>(plus cost per hygiene element, RG-C)</i>	
Twin systems GSX 5, 10, 10-I	943 187	942 187
Twin system GSX plus		942 287
Delta-p 1" - 1¼"	943 085	942 085
Delta-p 1½" - 2"	943 185	942 185
Disinfection Delta-p 1" - 1¼"	944 085	
Disinfection Delta-p 1½" - 2"	944 185	
Extended start-up Delta-p 1" - 1¼"	943 285	
Extended start-up Delta-p 1½" - 2"	943 385	
<b>Water softeners without DVGW certification (incl. system separators)</b>		
Single systems R 1"	943 122	942 122
Twin systems R 1"	943 125	942 125
Twin systems R 1½"	943 126	942 126
<b>Filter systems</b>		
GENO-mat KF-Z	943 110	942 110
GENO-mat MS-Z	943 111	942 111
GENO-mat AK-Z	943 112	942 112
GENO-mat TE-Z	943 113	942 113
<b>Deferrisation, demanganisation</b>		
without regeneration tank	943 154	942 154
with regeneration tank	943 153	942 153

· **Note:** Required consumables, chemicals and regeneration salt will be charged separately.

Commissioning and  
Maintenance, Index

Devices, systems, services Designation	Commissioning Order no.	Maintenance Order no.
<b>Reduction of nitrate</b>		
Single systems	943 129	942 129
<b>GENO-therm</b>		
Reusable GENO-therm cartridge, mixed bed cartridge desaliQ:BA/MA/MB	943 702	942 702
(regeneration costs not included)		
AVRO-flex	943 820	942 820
<b>Safety devices</b>		
System separators DK 2-Mini, DK 2½" - 2"	943 132	942 132
System separators DN 50 - DN 250	943 133	942 133
GENO-G5	943 134	942 134
protectliQ, GENO-STOP	943 226	942 226
<b>Hygiene technology</b>		
safeliQ:EB	943 525	942 525
(plus cost per hygiene element, RG-C)		
<b>UV disinfection</b>		
Types violiQ:UV20, 66, 85	943 521	942 521
<b>Heating technology</b>		
GENO-Neutra N-14 up to N-210, NO-5 up to NO-12	943 414	942 414
GENO-Neutra FNH-420-R	943 413	942 413

· **Note:** Required consumables, chemicals and regeneration salt will be charged separately.

<b>Analyses packages</b>		
Public water supply	943 911	
Well water	943 912	
Swimming pool water <sup>1</sup>	943 913	
Dimensioning of osmosis systems	943 914	
Heating water	943 915	
Local/district heating, biogas systems	943 916	
Cooling water <sup>1</sup> , open	943 917	
Cooling water, closed/semi-closed	943 918	
Evaluation of deposits	943 920	
Evaluation of pipe sample	943 922	
Sampling by Grünbeck's subsidiaries and representations	943 921	

<sup>1</sup> Swimming pool water and cooling water, open: For a detailed assessment, we recommend an additional analysis of the filling and make-up water.

· **Note:** In individual cases, additional cost can occur for increased analysis efforts.

<b>Regeneration costs<sup>2</sup></b>	
Reusable GENO-therm cartridge 290	707 050ak
Reusable GENO-therm cartridge 570	707 060ak
Reusable GENO-therm cartridge 825	707 070ak
Reusable GENO-therm cartridge 1160	707 080ak
Reusable GENO-therm cartridge 1615	707 090ak
Mixed bed cartridge desaliQ:BA6	707 450ak
Mixed bed cartridge desaliQ:BA12	707 460ak
Mixed bed cartridge desaliQ:BA13	707 470ak
Mixed bed cartridge desaliQ:BA16	707 480ak
Mixed bed cartridge desaliQ:BA20	707 490ak

<sup>2</sup> Plus costs for roundtrip resp. roundtrip by shipping company

Ord. no.	Item	RG-	Page
100001	Seal kit for FS 1" + FSD 1"	I	17
100002	Seal kit for FS 1 1/4" - 2", 3 pcs	I	17
100034360000	Double screw connection 3/4"	B	70
100651	Filter element with O-ring	I	19
100860	Pressure gauge to indicate operating pressure 1"	B	17
100865	Pressure gauge to indicate operating pressure 1/4"	B	17
100870	Pressure gauge to indicate operating pressure 1 1/2"	B	17
100875	Pressure gauge to indicate operating pressure 2"	B	17
101220	Fine filter pureliQ:K20	A	8
101225	Fine filter pureliQ:K25	A	8
101230	Fine filter pureliQ:K32	A	8
101270	Fine filter pureliQ:KD20	A	8
101272e	Filter element, 100 µm, 2-pack	A	19
101275	Fine filter pureliQ:KD25	A	8
101290	Fine filter pureliQ:KD32	A	8
101320	Backwash filter pureliQ:R20	A	9
101325	Backwash filter pureliQ:R25	A	9
101330	Backwash filter pureliQ:R32	A	9
101370	Backwash filter pureliQ:RD20	A	9
101375	Backwash filter pureliQ:RD25	A	9
101380	Backwash filter pureliQ:RD32	A	9
101420	Automatic filter pureliQ:A20	A	10
101425	Automatic filter pureliQ:A25	A	10
101430	Automatic filter pureliQ:A32	A	10
101470	Automatic filter pureliQ:AD20	A	10
101475	Automatic filter pureliQ:AD25	A	10
101480	Automatic filter pureliQ:AD32	A	10
101510	BOXER RX 3/4", backwash filter	A	12
101515	BOXER RX 1", backwash filter	A	12
101520	BOXER RX 1 1/4", backwash filter	A	12
101525	BOXER RDX 3/4", backwash filter	A	12
101530	BOXER RDX 1", backwash filter	A	12
101535	BOXER RDX 1 1/4", backwash filter	A	12
101540000000	BOXER RX 1 1/2", Backwash filter	A	13
101545000000	BOXER RX 2", Backwash filter	A	13
101580000000	BOXER RDX 1 1/2", Backwash filter	A	13
101585000000	BOXER RDX 2", Backwash filter	A	13
101639e	Seal kit FS-B, 1 1/2", 2", 2 pcs	I	17
101641e	Seal kit pureliQ/BOXER/FS-B 1", 1 1/4", 2 pcs	I	17
101646e	Adapter kit KOMBI-pureliQ/BOXER 1"	B	18
101647e	Adapter kit FS 1" to pureliQ/BOXER/FS-B 1"	B	18
101651e	Adapter kit FS 1 1/2" to FS-B/KICKER 1 1/2"	B	18
101652e	Adapter kit FS 2" to BOXER/FS-B/KICKER 2"	B	18
101815	BOXER KDX 3/4", fine filter	A	11
101820	BOXER KDX 1", fine filter	A	11
101825	BOXER KDX 1 1/4", fine filter	A	11
101830	BOXER KX 3/4", fine filter	A	11
101835	BOXER KX 1", fine filter	A	11
101840	BOXER KX 1 1/4", fine filter	A	11
101845000000	BOXER KX 1 1/2", fine filter	A	13
101852	Adapter kit FS 1 1/2" pureliQ, BOXER, FS-B 1 1/4"	B	18
101862	Adapter kit KOMBI, pureliQ, BOXER 3/4"	B	18
101864	Adapter kit KOMBI, pureliQ, BOXER 1 1/4"	B	18
101865	Adapter kit KOMBI (V1), pureliQ, BOXER 1"	B	18, 28
101866	Adapter kit KOMBI (V1), pureliQ, BOXER 1 1/4"	B	18, 28
101885000000	BOXER KX 2", fine filter	A	13
101890000000	BOXER KDX 1 1/2", fine filter	A	13
101895000000	BOXER KDX 2", fine filter	A	13
102185	GENO-fine filter FME-VWV 50 (stainless steel version)	B	16
102190	GENO-fine filter FME 50 (stainless steel version)	B	16
102195	GENO-fine filter FME-KW 50 (stainless steel version)	B	16
102285	GENO-fine filter FME-VWV 65 (stainless steel version)	B	16
102290	GENO-fine filter FME 65 (stainless steel version)	B	16
102295	GENO-fine filter FME-KW 65 (stainless steel version)	B	16
102385	GENO-fine filter FME-VWV 80 (stainless steel version)	B	16
102390	GENO-fine filter FME 80 (stainless steel version)	B	16
102395	GENO-fine filter FME-KW 80 (stainless steel version)	B	16
102400	GENO-fine filter FM 150	B	16

Ord. no.	Item	RG-	Page
102401	GENO-fine filter FM-VWV 150	B	16
102470	GENO-fine filter FM-KW 150	B	16
102485	GENO-fine filter FME-VWV 100 (stainless steel version)	B	16
102490	GENO-fine filter FME 100 (stainless steel version)	B	16
102495	GENO-fine filter FME-KW 100 (stainless steel version)	B	16
102500	GENO-fine filter FM 200	B	16
102501	GENO-fine filter FM-VWV 200	B	16
102570	GENO-fine filter FM-KW 200	B	16
102850	Hose extension kit for FM 150-200, 500 mm	B	16
102870	GENO-differential pressure switch type K 0.16 - 1.6	B	16
103000010001	GENO-RFE 100 µm, 2-pack for BOXER KX, KDX 1 1/2", 2"	A	19
103000020001	GENO-RFE 100 µm, 2-pack, size 3 without protective cylinder	A	19
103000030001	GENO-RFE 100 µm, 28-pack, size 4	A	19
103001	GENO-RFE 50 µm, 2-pack, size 1 with protective cylinder	I	19
103002	GENO-RFE 50 µm, 2-pack, size 2 with protective cylinder	I	19
103003	GENO-RFE 50 µm, 2-pack, size 3 with protective cylinder	I	19
103007	GENO-RFE 80 µm, 2-pack, size 1 with protective cylinder	I	19
103008	GENO-RFE 80 µm, 2-pack, size 2 with protective cylinder	I	19
103009	GENO-RFE 80 µm, 2-pack, size 3 with protective cylinder	I	19
103044	GENO-RFE 50 µm, 2-pack, size 5 without protective cylinder	I	19
103061	GENO-RFE 5 µm, 2-pack, size 1 with protective cylinder	I	19
103062	GENO-RFE 5 µm, 2-pack, size 2 with protective cylinder	I	19
103063	GENO-RFE 5 µm, 2-pack, size 3 with protective cylinder	I	19
103067	GENO-RFE 20 µm, 2-pack, size 1 with protective cylinder	I	19
103068	GENO-RFE 50 µm, 2-pack, size 1 without protective cylinder	I	19
103069	GENO-RFE 50 µm, 2-pack, size 2 without protective cylinder	I	19
103070	GENO-RFE 50 µm, 2-pack, size 3 without protective cylinder	I	19
103071	GENO-RFE 20 µm, 2-pack, size 1 without protective cylinder	I	19
103075	GENO-RFE 80 µm, 2-pack, size 1 without protective cylinder	I	19
103076	GENO-RFE 80 µm, 2-pack, size 2 without protective cylinder	I	19
103077	GENO-RFE 80 µm, 2-pack, size 3 without protective cylinder	I	19
103081	GENO-RFE 5 µm, 2-pack, size 1 without protective cylinder	I	19
103082	GENO-RFE 5 µm, 2-pack, size 2 without protective cylinder	I	19
103083	GENO-RFE 5 µm, 2-pack, size 3 without protective cylinder	I	19
103100	GENO-RFE 50 µm, 2-pack, size 6 without protective cylinder	I	19
103111	GENO-RFE 500 µm, 2-pack, without protective cylinder, VA	I	19
103151	GENO-RFE 500 µm, 14-pack, size 4, VA	I	19
103153	GENO-RFE 50 µm, 28-pack, size 4	I	19
104000010001	Spigot wrench for pressure reducer, BOXER X 1 1/2" - 2"	B	17
104805	Spigot wrench for pressure reducer	B	17
105805	Belt wrench for diameters up to 170 mm	B	17
106804e	Adapter kit from MS to MX/MXA (A) DN 80	B	18
106805e	Adapter kit from MS to MX/MXA (A) DN 100	B	18
107400	GENO-backwash filter MX 1"/standard	A	14
107405	GENO-backwash filter MX 1 1/4"/standard	A	14
107410	GENO-backwash filter MX 1 1/2"/standard	A	14
107415	GENO-backwash filter MX 2"/standard	A	14
107420	GENO-backwash filter MX DN 65/standard	B	15
107425	GENO-backwash filter MX DN 80/standard	B	15
107430	GENO-backwash filter MX DN 100/standard	B	15
107450	GENO-backwash filter MXA 1"/standard	A	14
107455	GENO-backwash filter MXA 1 1/4"/standard	A	14
107460	GENO-backwash filter MXA 1 1/2"/standard	A	14
107465	GENO-backwash filter MXA 2"/standard	A	14
107470	GENO-backwash filter MXA DN 65/standard	B	15
107475	GENO-backwash filter MXA DN 80/standard	B	15
107480	GENO-backwash filter MXA DN 100/standard	B	15
107660	Seal kit for GENO-fine filter FSV, 2 pcs	I	17
108601	Seal kit for KOMBI-filter GENO-pur	I	17
108614	Seal kit for KOMBI-backwash filter	I	17
114031	Mineral solution exaliQ control, 2 x 3-litre bottle	I	32
114032	Mineral solution exaliQ safe, 2 x 3-litre bottle	I	32
114033	Mineral solution exaliQ safe+, 2 x 3-litre bottle	I	32
114034	Mineral solution exaliQ pure, 2 x 3-litre bottle	I	32
114035	Mineral solution exaliQ neutra, 2 x 3-litre bottle	I	32
114071	Mineral solution exaliQ control, 15-litre canister	I	32
114072	Mineral solution exaliQ safe, 15-litre canister	I	32
114073	Mineral solution exaliQ safe+, 15-litre canister	I	32

Ord. no.	Item	RG-	Page
114074	Mineral solution exaliQ pure, 15-litre canister	I	32
114075	Mineral solution exaliQ neutra, 15-litre canister	I	32
114081	Mineral solution exaliQ control, 60-litre canister	I	32
114082	Mineral solution exaliQ safe, 60-litre canister	I	32
114083	Mineral solution exaliQ safe+, 60-litre canister	I	32
114084	Mineral solution exaliQ pure, 60-litre canister	I	32
114085	Mineral solution exaliQ neutra, 60-litre canister	I	32
115334	Double screw connection 1 1/4"	B	39
115850	M-Bus measuring transducer D-DAM, complete	B	52
117400	Dosing system exaliQ:KC6 - 1"	A	28
117405	Dosing system exaliQ:SC6 - 1"	A	28
117410	Dosing system exaliQ:SC10 - 1 1/4"	A	28
117415	Dosing system exaliQ:SC20 - 1 1/2"	A	28
117420	Dosing system exaliQ:SC30 - 2"	A	28
117460	Dosing system exaliQ:KC6-e - 1"	A	29
117465	Dosing system exaliQ:SC6-e - 1"	A	29
117490	Conversion kit for exaliQ:SC systems, 60-litre suction lance	A	28
117495	Conversion kit exaliQ:KC6 to exaliQ:SC6	A	28, 29
118505	GENODOS suction lance B 10/20, l = 750 mm/PE	B	72
126010	Mechanical blending valve 1"	B	46
126015	Mechanical blending valve 1 1/4"	B	46
126400	Safety device protectliQ:A20	A	22
126405	Safety device protectliQ:A25	A	22
126410	Safety device protectliQ:A32	A	22
126415	Safety device protectliQ:A40	A	22
126802	Power supply plug GENO-STOP, protectliQ	A	22
126805	Water sensor with 2 m cable GENO-STOP, protectliQ	A	22
126815	Water sensor with 10 m cable GENO-STOP, protectliQ	A	22
128001	Adjusting piece l = 190 mm, connection 1"	B	18
128401	Adjusting piece l = 190 mm, connection 1 1/4"	B	18
129500	Gravel filter GENO-mat KF-Z 20/10	B	56
129505	Gravel filter GENO-mat KF-Z 25/13	B	56
129510	Gravel filter GENO-mat KF-Z 30/14	B	56
129515	Gravel filter GENO-mat KF-Z 40/17	B	56
129520	Gravel filter GENO-mat KF-Z 40/18	B	56
129525	Gravel filter GENO-mat KF-Z 50/19	B	56
129530	Gravel filter GENO-mat KF-Z 60/20	B	56
129550	Multi-layer filter GENO-mat MS-Z 20/10	B	56
129555	Multi-layer filter GENO-mat MS-Z 25/13	B	56
129560	Multi-layer filter GENO-mat MS-Z 30/14	B	56
129565	Multi-layer filter GENO-mat MS-Z 40/17	B	56
129570	Multi-layer filter GENO-mat MS-Z 40/18	B	56
129575	Multi-layer filter GENO-mat MS-Z 50/19	B	56
129580	Multi-layer filter GENO-mat MS-Z 60/20	B	56
129800	Activated carbon filter GENO-mat AK-Z 20/10	B	56
129805	Activated carbon filter GENO-mat AK-Z 25/13	B	56
129810	Activated carbon filter GENO-mat AK-Z 30/14	B	56
129815	Activated carbon filter GENO-mat AK-Z 40/17	B	56
129820	Activated carbon filter GENO-mat AK-Z 40/18	B	56
129825	Activated carbon filter GENO-mat AK-Z 50/19	B	56
129830	Activated carbon filter GENO-mat AK-Z 60/20	B	56
129850	Partial deacidification filter GENO-mat TE-Z 20/10	B	57
129855	Partial deacidification filter GENO-mat TE-Z 25/13	B	57
129860	Partial deacidification filter GENO-mat TE-Z 30/14	B	57
129865	Partial deacidification filter GENO-mat TE-Z 40/17	B	57
129870	Partial deacidification filter GENO-mat TE-Z 40/18	B	57
129875	Partial deacidification filter GENO-mat TE-Z 50/19	B	57
129880	Partial deacidification filter GENO-mat TE-Z 60/20	B	57
132095	Service kit for DK Mini/Standard/Maxi	B	25
132460	Euro system separator GENO-DK 2-Maxi DN 50	B	25
132465	Euro system separator GENO-DK 2-Maxi DN 65	B	25
132470	Euro system separator GENO-DK 2-Maxi DN 80	B	25
132475	Euro system separator GENO-DK 2-Maxi DN 100	B	25
132510	Euro system separator GENO-DK 2, 1/2"	A	24
132520	Euro system separator GENO-DK 2, 3/4"	A	24
132530	Euro system separator GENO-DK 2, 1"	A	24
132540	Euro system separator GENO-DK 2, 1 1/4"	A	24
132560	Euro system separator GENO-DK 2, 1 1/2"	A	24

Ord. no.	Item	RG-	Page
132570	Euro system separator GENO-DK 2, 2"	A	24
132720	Euro system separator GENO-DK-Maxi DN 150	B	25
132725	Euro system separator GENO-DK-Maxi DN 200	B	25
132730	Euro system separator GENO-DK-Maxi DN 250	B	25
132870	Adapter kit DK-standard 1/2" to DK 2	B	18
132875	Adapter kit DK-standard 3/4" to DK 2	B	18
132880	Adapter kit DK-standard 1" to DK 2	B	18
132885	Adapter kit DK-standard 1 1/4" to DK 2	B	18
132890	Adapter kit DK-standard 1 1/2" to DK 2	B	18
132895	Adapter kit DK-standard 2" to DK 2	B	18
133100	Euro system separator GENO-DK 2-Mini	A	24
134100	Euro system separation device GENO-G5	B	26
134805	Rinsing unit for GENO-G5	B	26
134810	Connection kit for GENO-G5	B	26
150100	GENO-dosing unit type H 5	B	70
150110	thermaliQ filling pump	A	66
151820	Hose extension kit for flushing compressor/MOBIldos	B	53
153094	Regeneration tank FE/MN system, 100 l tank	B	58
153095	Regeneration tank FE/MN system, 300 l tank	B	58
153410	Demanganisation system GENO-mat MN-Z 20/10	B	58
153420	Demanganisation system GENO-mat MN-Z 25/13	B	58
153430	Demanganisation system GENO-mat MN-Z 30/14	B	58
153440	Demanganisation system GENO-mat MN-Z 40/17	B	58
153450	Demanganisation system GENO-mat MN-Z 40/18	B	58
153460	Demanganisation system GENO-mat MN-Z 50/19	B	58
153470	Demanganisation system GENO-mat MN-Z 60/20	B	58
156868	Hydrogen peroxide spray	B	53
160150	Dosing system MOBIldos	B	53
163000010000	Dosieranlage GENODOS DME Delta-p	A	30
163140	Dosing system GENODOS DM-T 6	B	51
163150	Dosing system GENODOS DM-T 10	B	51
163160	Dosing system GENODOS DM-T 20	B	51
163170	Dosing system GENODOS DM-T 30	B	51
163180	Dosing system GENODOS DM-T 80	B	51
163190	Dosing system GENODOS DM-T 100	B	51
163220	Dosing group 2.72, PVC	B	51
163420	Dosing system GENODOS DM-oxi 1"	B	59
163430	Dosing system GENODOS DM-oxi 1 1/2"	B	59
163435	Dosing system GENODOS DME 6	A	30
163445	Dosing system GENODOS DME 10	A	30
163455	Dosing system GENODOS DME 20	A	30
163465	Dosing system GENODOS DME 30	A	30
163475	Dosing system GENODOS DME 80	B	30
163485	Dosing system GENODOS DME 100	B	30
163765	Conversion kit for GENODOS DME, 60-litre suction lance	A	30
163790	Overflow valve for GENODOS DM-oxi 1", 1 1/2"	B	59
163805	Chemical spill tray for 60/100 l dosing tanks	B	51
163820	Dosing system GENODOS type DM-B 6	B	52
163825	Dosing system GENODOS type DM-B 10	B	52
163830	Dosing system GENODOS type DM-B 20	B	52
163835	Dosing system GENODOS type DM-B 30	B	52
163860	Dosing point for filter systems up to type 30/14	B	59
163870	Voltage-free level signal GENODOS, complete	B	72
163880	Dosing point for filter systems starting from type 40/17	B	59
170000010000	Combined measuring device for pH and conductivity, complete	B	68, 70, 75
170001	GENO-phos Nr. 1, 0.5 kg canister	B	71
170002	GENO-phos Nr. 1, 3.5 kg bucket	B	71
170003	GENO-phos Nr. 2, 3.5 kg bucket	B	71
170004	Sodium sulphite: 6.0 kg	B	71
170015	GENO-Passivierungspulver (passivation powder), 3.5 kg	I	76
170016	GENO-special granulate, 1 kg	B	58
170017	GENO-special granulate, 5 kg	B	58
170022	GENO-clean CP, 10 x 1 litre	B	50, 76
170028	GENO-clean CP, 22 kg (18.3 l)	B	76
170029	GENO-oxi plus, 20 kg (19.7 l)	B	58, 59
170041	Potassium permanganate, 5 kg	B	58
170045	GENO-clean M, 12 kg	B	76
170047	GENO-clean M, 1 litre	B	76

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170052	GENO-phos Nr. 1, 25 kg bag	B 71
170053	GENO-phos Nr. 2, 25 kg bag	B 71
170054	Sodium sulphite, 25 kg bag	B 71
170057	thermaliQ clean, dosing solution, 1 litre	A 66
170058	thermaliQ clean, dosing solution, 5 litres	A 66
170059	thermaliQ clean, dosing solution, 10 litres	A 66
170076	thermaliQ safe, dosing solution, 1 litre	A 66
170077	thermaliQ safe, dosing solution, 5 litres	A 66
170078	thermaliQ safe, dosing solution, 10 litres	A 66
170097	Water test kit for manganese 0.03 - 0.5 mg/l	B 58, 75
170103	Water test kit for ortho-phosphate 2 - 15 mg/l	B 75
170106	Water test kit for pH value 0 - 6 / 4.5 - 10 / 7 - 14	B 75
170107	Water test kit for sulphite drip test 0.5 - 20 mg/l	B 75
170121	Water test kit for total hardness GENO-plex B	B 75
170128	Water test kit for chlorine and pH value	B 51, 53, 75
170131	Water test kit for nitrate	B 75
170136	Water test kit for peroxide 0.5 - 25 mg/l	B 53, 75
170138	Water test kit for chlorine 10 - 160 mg/l	B 53
170140	Water test kit for molybdenum 5 - 250 mg/l	B 70, 75
170141	Water test kit for GENO-heating protection FSK	B 75
170144	Water test kit for residual oxygen 0 - 100 ppb	B 75
170147	Water test kit for pH value 7 - 14	B 70, 75
170148	Water test kit for pH value 4.5 - 10	B 75, 76
170149	Water test kit for total hardness type B, 100 determinations	B 75
170150	Water test kit for iron	B 58, 76
170167	Water test kit for peroxide 100 - 1,000 mg/l	B 53
170169	Water test kit for total alkalinity	B 75
170173	pH indicator strips pH 4.5 - 10	B 74
170185	Digital hand-held measuring device for pH, conductivity, temperature	B 68
170187	Water test kit for total hardness °dH and °f	B 70, 75
170193	Refill pack of reagents for water test kit for manganese (100 determinations)	B 58
170205	Filter sand SB 0.4 - 0.8 T EN 12904	B 57
170207	Quartz sand SB 1.0 - 2.0 T EN 12904	B 57
170208	Quartz gravel SB 3.15 - 5.6 T EN 12904	B 57
170220	Hydroanthrasite H, grain size I: 0.6 - 1.6 mm	B 57
170230	Hydrolit-Ca 1.0 - 3.0 mm	B 57
170249	GENO-Neutralit Hz, 25 kg	B 74
170253	Activated carbon (AK-Z), 20 kg	B 57
170306	Sodium metabisulphite, 5-kg bucket	B 53
170320	GENO-perox, content: 1 l	B 53
170335	GENO-perox, content: 11 kg	B 53
170430	Chlorine dioxide test, 0.02 - 0.55 ppm	B 52, 53
170450	GENO-Baktox, 3 l	B 53
170460	GENO-Baktox, 10 kg	B 53
170470	GENO-Baktox, 20 kg, complete	B 53
170501	Phosphate reagent I (250 ml)	B 75
170502	Phosphate reagent II (250 ml)	B 75
170504	thermaliQ safe test kit	A 66
170520	Sulphite reagent 1/2/3, small package	B 75
170525	Sulphite reagent 1/2/3, large package	B 75
170535	Water test kit for sulphite, 10 - 1,000 mg/l	B 70, 75
170540	Water test kit type CPM	B 75
170554	Water test kit for ortho-phosphate, 1 - 20 mg/l	B 75
170655e	Refill kit of reagents for thermaliQ safe test kit	A 70
180230	GENO-heating protection FSK, 20 kg	I 71
180300	Neutralisation agent FNK, 20 kg	B 74, 76
180350	GENO-Neutrox, 25 kg canister	B 72
180355	GENO-Neutrox, 75 kg canister	B 72
180405	GENO SW 2000, 20 kg canister	B 71
180415	GENO SW 2010, 20 kg	B 71
180420	GENO SW 2010, 100 l barrel	B 71
180440	GENO SW 2040, 25 kg canister	B 71
180530	GENO-safe A, 1 l	I 71
180540	GENO-safe A, 10 x 1 l	I 71
180550	GENO-safe A, 11 kg (10 l)	I 71
180810	Safety package for caustic substances	B 72
185000010000	Insert with injection point G ¼" for Delta-p 1"	B 30

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185000020000	Insert with injection point G ¼" for Delta-p 1¼"	B 30
185000030000	Insert with injection point G ¼" for Delta-p 1½"	B 30
185000040000	Insert with injection point G ¼" for Delta-p 2"	B 30
185100	Water softener Delta-p 1"	B 42
185105	Water softener Delta-p 1" on pedestal	B 43
185110	Water softener Delta-p 1¼"	B 42
185115	Water softener Delta-p 1¼" on pedestal	B 43
185120	Water softener Delta-p 1½"	B 42
185125	Water softener Delta-p 1½" on pedestal	B 43
185130	Water softener Delta-p 2"	B 42
185135	Water softener Delta-p 2" on pedestal	B 43
185200	Water softener Delta-p 1" - I	B 42
185205	Water softener Delta-p 1" - I on pedestal	B 43
185210	Water softener Delta-p 1¼" - I	B 42
185215	Water softener Delta-p 1¼" - I on pedestal	B 43
185220	Water softener Delta-p 1½" - I	B 42
185225	Water softener Delta-p 1½" - I on pedestal	B 43
185230	Water softener Delta-p 2" - I	B 42
185235	Water softener Delta-p 2" - I on pedestal	B 43
185335	Pre-alarm salt supply	B 43, 46
185505	Connection kit 1" - I	B 46, 58
185515	Connection kit 1"	B 46
185520	Connection kit 1¼" - I	B 46
185530	Connection kit 1¼"	B 46
185540	Connection kit 1½" - I	B 46, 58
185545	Connection kit 1½"	B 46
185775	Drain connection DN 50 as per DIN EN 1717 for Delta-p	B 43
185807	Connection kit for Delta-p 1" - 1¼", installation length 190 mm	B 43
185808	Connection kit for Delta-p 1" - 1¼" - I	B 43
185820	Pedestal for Delta-p 1" - 1¼"	B 43
185823	Connection kit for Delta-p 1½" - 2", installation length 260 mm	B 43
185824	Connection kit for Delta-p 1½" - 2" - I	B 43
185825	Pedestal for Delta-p 1½" - 2"	B 43
185846	Screw connection for connection block Delta-p 1"	B 43
185847	Screw connection for connection block Delta-p 1¼"	B 43
185848	Screw connection for connection block Delta-p 1½"	B 43
185849	Screw connection for connection block Delta-p 2"	B 43
185890	Communication module DE200 Profibus	B 43
186100	Water softener GENO-mat duo WE-X 65	B 45
186110	Water softener GENO-mat duo WE-X 150	B 45
186120	Water softener GENO-mat duo WE-X 300	B 45
186130	Water softener GENO-mat duo WE-X 450	B 45
186140	Water softener GENO-mat duo WE-X 750	B 45
186200	Water softener GENO-mat duo WE-X 50	B 45
186210	Water softener GENO-mat duo WE-X 130	B 45
186220	Water softener GENO-mat duo WE-X 230	B 45
186230	Water softener GENO-mat duo WE-X 330	B 45
186240	Water softener GENO-mat duo WE-X 530	B 45
187140	Water softener softliQ:MD12i	B 44
187400	Water softener softliQ:MD32	A 37
187450	Water softener softliQ:MD38	A 37
187660e	Extension kit for connection hoses DN 25	B 39
187680e	Extension kit for connection hoses DN 32	B 39
187860e	Extension kit for connection hoses DN 22	B 39
187865	Connection angle 90°-1" (content: 2 pcs)	A 39
187870	Supplementary blending valve GSX/VGX	A 39
187875	Supplementary soft water outlet GSX/VGX	A 39
188140	Nitrate filter WINNI-mat VGX-N 50	B 55
188450	Nitrate filter WINNI-mat VGX-N 400	B 55
188460	Nitrate filter WINNI-mat VGX-N 650	B 55
188800	Delivery pump for regeneration water VGX/GSX/softliQ	A 39
188865	Installation kit softliQ	B 39
188870	Insulation kit softliQ:SD	A 39
188875	Drain connection DN 50 acc. to DIN EN 1717	A 39, 55
189100	Water softener softliQ:SD18	A 36
189200	Water softener softliQ:SD21	A 36
189300	Water softener softliQ:SD23	A 36
189895	Wall bracket softliQ:SD	B 39

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190570	Water softener HEH 9	B	70
190575	Exchanger resin, water softener, 4 litres	B	70
203624	Calibration solution, conductivity 1413 µS/cm, 50 ml	B	70
203627	Calibration solution pH 4, 50 ml	B	70
203628	Calibration solution pH 7, 50 ml	B	70
203631	Potassium chloride solution KCL 3 mol/l, 50 ml	B	70
210012	GENO-Chlor A, content of canister: 25 kg	B	51, 53
210560	Chemical spill tray for 20 l canisters	B	51, 52, 59
211213	Indicator DPD 1, 100 tablets	B	53
211235	Digital test device Scuba II	B	53
410011	GENO-Neutralit Hz, 8 kg	B	74
410135	Condensate prefiltration box DN 25	B	72
410230	GENO-Neutra NO-5	B	73
410240	GENO-Neutra NO-12	B	73
410250	GENO-Neutra NO-24	B	73
410285	GENO-alarm delay relay	B	74
410320	GENO-Neutra N-210	B	73
410335	Neutralisation system GENO-Neutra KW35	B	73
410345	Neutralisation system GENO-Neutra KW65	B	73
410435	Activated carbon filter GENO AF-5	B	74
410440	GENO-Neutra N-14	B	73
410450	GENO-Neutra N-70	B	73
410540	GENO-Neutra FNH-420-R	B	72
410585	Oil binding mats, 20 pcs, oil absorption	B	72
410680	Overflow alarm switch for GENO-Neutra	B	74
410770	GENO-Neutralit Hz, 3 kg	B	74
410801	Maintenance kit for GENO-Neutra N-14	B	74
410802	Maintenance kit for GENO-Neutra N-70	B	74
410803	Maintenance kit for GENO-Neutra N-210	B	74
410805	Maintenance kit for GENO-Neutra NO-5	B	74
410806	Maintenance kit for GENO-Neutra NO-12	B	74
410807	Maintenance kit for GENO-Neutra NO-24	B	74
410810	Maintenance kit GENO-Neutra KW35	B	74
410824	Maintenance kit activated carbon filter GENO AF-5	B	74
410830	Maintenance kit GENO-Neutra KW65	B	74
420150	Waste water lifting system AH-300	B	74
520020	Flushing kit for cleaning UV systems with GENO-clean CP	B	50
520070	Stainless steel connection kit 1" for UV systems	B	50
520075	Stainless steel connection kit 2" for UV systems	B	50
523000010000	Disinfection system violiQ:UV20	B	50
523000030000	Disinfection system violiQ:UV66	B	50
523000040000	Disinfection system violiQ:UV85	B	50
523800	Wall bracket for UV systems (violiq:UV, GENO-UV, KWA)	B	50
523805	Floor rack for violiQ:UV66, UV80 DVGW/IKWA	B	50
523810	Floor rack for violiQ:UV85, UV120 DVGW/IKWA	B	50
523815	Floor rack for violiQ:UV20, UV33 DVGW/IKWA	B	50
523825	Temperature-controlled flushing for violiQ:UV	B	50
523830010000	USB data logger for UV systems violiQ:UV	B	50
525410	Hygiene system safeliQ:EB30	A	49
525460	Water softener softliQ:PB20	A	38
702842	GENO-Multi LF	B	70
702845	Water meter with connection material	B	70
707000010000	desaliQ inline filter module	B	64
707000020000	desaliQ inline replacement filter elements (6 pcs)	B	64
707000030000	desaliQ inline control module	B	65
707000050000	desaliQ basic filling module	B	65
707015	thermaliQ conductivity measuring cell with adapter	B	70
707025	thermaliQ conductivity measuring cell	B	70
707055	GENO-therm solenoid valve, complete	B	70
707059e	Hose adapter from male thread ¾" to quick coupling	B	70
707124	Double nipple for F-NT and OV G ¾ x 28	B	70
707127	desaliQ:HB4 bottle adapter	B	63, 70
707150	Filling cartridge desaliQ:HB4 with adapter	B	63
707155	Filling cartridge desaliQ:HB4 without adapter	B	63
707190	Analysis case (pH value + conduct., total hardness, molyb.)	B	68
707192	Analysis case (pH value + conductivity, total hardness)	B	68
707276	desaliQ connection adapter	B	63
707435	desaliQ resin bags 2 x 6 l	A	64

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707450	Mixed bed cartridge desaliQ:BA6	B	67
707455000000	Mixed bed cartridge desaliQ:MB9	A	64
707460	Mixed bed cartridge desaliQ:BA12	B	67
707465	Mixed bed cartridge desaliQ:BA12 VARIO mini	B	67
707470	Mixed bed cartridge desaliQ:BA13	B	67
707480	Mixed bed cartridge desaliQ:BA16	B	67
707485	Mixed bed cartridge desaliQ:BA16 VARIO mini	B	67
707490	Mixed bed cartridge desaliQ:BA20	B	67
707570	Depth filter element, 25 µm, 2 pcs in cardboard box	B	70
707575	Depth filter element, 50 µm, 2 pcs in cardboard box	B	70
707580	Depth filter element, 100 µm, 2 pcs in cardboard box	B	70
707585	Depth filter element, 150 µm, 2 pcs in cardboard box	B	70
707680	Mixed bed resin for filling cartridge desaliQ:HB4	B	63
707705	GENO-therm sludge separator DN 20, complete	B	69
707710	GENO-therm sludge separator DN 25, complete	B	69
707715	GENO-therm sludge separator DN 32, complete	B	69
707720	GENO-therm sludge separator DN 40, complete	B	69
707725	GENO-therm sludge separator DN 50, complete	B	69
707745	Filling cartridge desaliQ:HB2	B	63
707750	Filling group thermaliQ:SB13	B	62
707755	Treatment group thermaliQ:HB2	B	62
707760	Filling section thermaliQ:FB2	B	62
707765	Softening cartridge decaliQ:BA12 VARIO mini	B	67
707770	Filling section thermaliQ:FB13i	B	62
707785	Softening cartridge decaliQ:BA16 VARIO mini	B	67
707840	Hose kit DN 20 straight/straight	B	70
707845	Hose kit DN 20 straight/90°	B	70
707850	desaliQ hose kit DN 12, 1.5 m (2 pcs)	B	63, 70
752250	Mobile reverse osmosis system AVRO-flex 400	B	69
82552110	System log for warm water heating system		70



#### Company profile

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 700

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 countries as well as associated  
 partners world-wide

**Certifications**  
 DIN EN ISO 9001, DIN EN ISO 14001,  
 SCC\* by TÜV Management Service,  
 OHRIS

**Product certifications**  
 DVGW, SVGW, ACS, EAC

**Approvals**  
 for welding, specialised welding company  
 according to DIN EN ISO 3834-3.  
 Manufacturing of pressure equipment  
 according to the Pressure Equipment Directive  
 2014/68/EU as per AD 2000 data sheet HP0  
 and DIN EN 13480. Manufacturer of steel  
 constructions according to DIN EN 1090.  
 WEEE reg. no.: DE 77585882



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