75
grünbeck

Residential Applications | Sanitary and Heating

General Catalogue

grünbeck

Grünbeck water treatment – 75 years of experience

QUALITY MADE IN GERMANY

For 75 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 Hoechstaedt/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.

BECOME A WATER EXPERT!

General Catalogue | Residential Applications · Edition 1.0

Table of Contents

Filtration

Safety Devices

Dosing Technology

Softening Residential

Softening Trade/Industry

Hygiene and Disinfection

Heating Water

Water Monitoring

Commissioning and Maintenance

Index

Treatment of drinking water

Filtration

Together, the **pureliQ** filter series and the **softliQ** water softeners ensure water quality that will delight you. The **exaliQ** dosing technology provides your water installation with extra protection against corrosion. In addition, the **protectliQ** safety fitting offers optimimum protection against water damage. Because we at Grünbeck think that it should be real easy for you to experience water at its best: soft, pure and safe.

Safety
Safety devices
From page 21

Purity
Water filters
From page 5

Softness
Water softeners
From page 34

Maintaining value
Dosing systems
From page 27
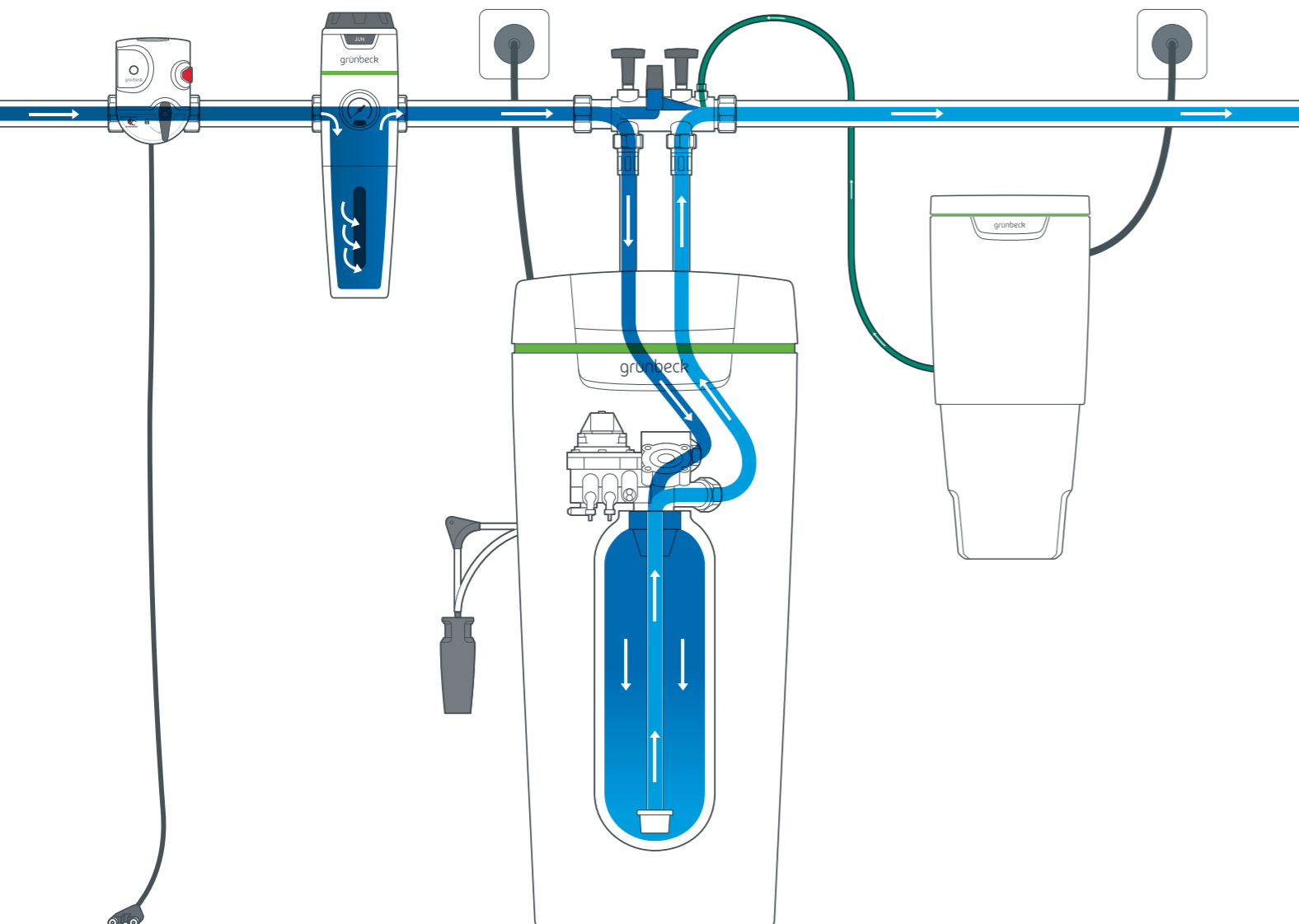
The water filter as the first stage of water treatment

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 ≥ 150 µm (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 pureliQ and BOXER X filters reliable 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 bar
• if the max. admissible operating pressure of fittings, devices, etc. is being exceeded."

grünbeck

grünbeck

pureliQ:	K			KD			R			RD			A			AD		
Point-of-entry filter to the house in smooth, organic design	✔			✔			✔			✔			✔			✔		
Nominal diameter [DN]	20	25	32	20	25	32	20	25	32	20	25	32	20	25	32	20	25	32
Nominal flow Δp = 0.2 bar [m³/h]	2.8	3.7	4.0	—			3.2	4.2	5.0	—			3.2	4.2	5.0	—		
Δp = 0.5 bar [m³/h]	4.5	6.0	6.3	—			5.1	6.7	8.0	—			5.1	6.7	8.0	—		
as per DIN EN 1567 [m³/h]	—			2.3	3.6	5.8	—			2.3	3.6	5.8	—			2.3	3.6	5.8
Pore size (as per DIN EN 13443-1) [µm]	100			100			100			100			100			100		
Nominal pressure	PN 16			PN 16			PN 16			PN 16			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	—			—			—			—			✔			✔		

Filtration

Fine filter pureliQ:K

Fine filter pureliQ:KD

Backwash filter pureliQ:R

Backwash filter pureliQ:RD

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.

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

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.

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 41. For suitable adapter kits, please refer to page 18.*

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

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

Automatic filter pureliQ:A

Automatic filter pureliQ:AD

Fine filter BOXER KX 1"

Fine filter BOXER KDX 1"

Filtration

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 realease 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 41.
For suitable adapter kits, please refer to page 18.

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, 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 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.

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

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

Filtration

Backwash filter BOXER RX 1"

Backwash filter BOXER RDX 1"

Fine filter BOXER KDX 2"

Backwash filter BOXER RDX 2"

NEW 1½" & 2"

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]	¾"	1"	1¼"
Flow rate BOXER RX, Δp = 0.2 bar [m³/h]	2.9	3.8	4.2
Δp = 0.5 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 conection DN 50 with siphon according to DIN 1717, please refer to page 41.
For suitable adapter kits, please refer to page 18.

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.

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 BOXER[1] [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 41, 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.
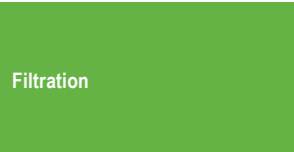
[1] *Overall height BOXER RX/RDX incl. outlet funnel DN 50*

Technical 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 ~100 - 240 V, 50/60 Hz

Backwash filter MR with screw connections

Backwash filter MRA with screw connections

Backwash filter MR with flange connection (according to DIN EN 1092-1)

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

Backwash filter MR

Manually backwashable protection filter according to DIN EN 806-2 for filtration of drinking or industrial 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 connection to a HT pipe DN 50 and two pressure gauges, integration into Grünbeck's myProduct app with reminder function for backwash.

Backwash filter MRA

Fully automatic version of the backwashable protection filter. Particularly suited for trade and industry as well as for large residential buildings. In addition with integrated drive unit and freely programmable controller with guided start-up. The controller can be rotated by 180° and always points in the desired direction, regardless of the flow direction, error detection and voltage-free contacts included. Can be programmed as required with maintenance interval for service request, bus interface (Modbus RTU) for remote monitoring and control, including connecting cable and power cable, timer-controlled release of backwash. Backwash can also be released via an external voltage-free contact or an operating key on the control unit. Safety solenoid valve and pressure sensors available as an option.

Backwash filters MR/MRA [DN]	25	32	40	50
Flow rate, Δp = 0.2 bar [m³/h]	8.5	12.0	22.0	27.0
Δp = 0.5 bar [m³/h]	13.0	18.5	32.5	45.0
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. MR (RG-A)	107000010000	107000020000	107000030000	107000040000
Order no. MRA (RG-A)	107000080000	107000090000	107000100000	107000110000

Accessories for backwash filter MRA	Order no. (RG-A)
Safety valve accessory kit	107000150000
Pressure sensor accessory kit	107000160000

Backwash filters MR/MRA Extra charge for versions with modified pore size			(not yet available as MRA)		
Order no.	Version	Designation	Filter type 1" - 1¼" (RG-A)	Filter type 1½" - 2" (RG-A)	Filter type DN 65 (RG-B) / Filter type DN 80 - 100 (RG-B)
Example					
1070000xx	.100	50 μm filter			
	.200	200 μm filter	Available at extra cost. Please inquire.		
	.300	500 μm filter			

· Please indicate the version number when ordering.

Backwash filters MR [DN]	65	80	100
Flow rate, Δp = 0.2 bar [m³/h]	37.0	60.0	60.0
Δp = 0.5 bar [m³/h]	47.0	96.5	98.0
K_v value [m³/h]	69	124	138
Installation length without counter-flanges [mm]	220	250	250
Order no. MR (RG-B)	107000050000	107000060000	107000070000

GENO-backwash filter MXA

Fully automatic version of the backwashable protection filter. Particularly suited for trade and industry as well as for large residential buildings. In addition with integrated drive unit and freely programmable **GENO-RS-tronic** controller, error detection and voltage-free contact. Can be programmed as required with maintenance interval for service request, including connecting cable and power cable with shock-proof plug, controlled via differential pressure and timer for release of backwash. Backwash process can also be released via an external, voltage-free contact or a button at the **GENO-RS-tronic**.

GENO-backwash filter MXA [DN]	65	80	100
Flow rate, Δp = 0.2 bar [m³/h]	30.0	60.0	60.0
Δp = 0.5 bar [m³/h]	47.0	96.5	98.0
KV value [m³/h]	69	124	138
Installation length without counter-flanges [mm]	220	250	250
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 DN 65 (RG-B)	Filter type DN 80 - 100 (RG-B)
Example					
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	Available at extra cost. Please inquire.	
	.211	200 μm filter	with safety device		
	.310	500 μm filter	without safety device		
	.311	500 μm filter	with safety device		

· Please indicate the version number when ordering.

GENO-fine filter FME

GENO-fine filter FM

Filtration

Seal kits

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, Δp = 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[1]
Empty weight [kg]	22	23	23.5	32.5	100	124
Order no. FME/FM (RG-B)	102 190	102 290	102 390	102 490	102 400	102 500
Order no. FME/FM-WW[2] (RG-B)	102 185	102 285	102 385	102 485	102 401	102 501
Order no. FME/FM-KW[3] (RG-B)	102 195	102 295	102 395	102 495	102 470	102 570

[1] For FM-KW 200, only order the pack of 14 filter elements once.   [2] Hot water   [3] 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.**

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**

Filtration

Adapter kit

Adjusting piece 1"
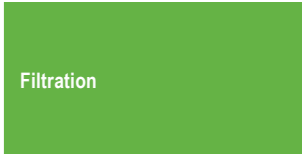
Adapter kits for the replacement of an older Grünbeck filter by a new Grünbeck filter	Extended by [mm]	Order no. (RG-B)
Adapter kit from FS 1" to pureliQ 1", BOXER 1"	37	101 647e
Adapter kit from FS 1¼" to pureliQ 1¼", BOXER 1¼"	103	101 852
Adapter kit from FS 1½" to BOXER X 1½"	42	101 651e
Adapter kit from FS 2" to BOXER X 2"	46	101 652e
Adapter kit KOMBI ¾" from[1] to pureliQ ¾", BOXER ¾"	10	101 862
Adapter kit KOMBI 1" from[1] to pureliQ 1", BOXER 1"	10	101 646e
Adapter kit KOMBI 1¼" from[1] to pureliQ 1¼", BOXER 1¼"	10	101 864
Adapter kit KOMBI (V1) 1" from[2] to pureliQ 1", BOXER 1"	50	101 865
Adapter kit KOMBI (V1) 1¼" from[2] 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

[1] Kombi connection flange for filter series GENO-pur, GENO-PS, GB, ASTRO, GENO-FSV
[2] 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 →	pureliQ: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 1¼"	S 1½" and 2"	FME/FM 50 – 150[1]	FM 200[1]	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			•																				103000010001	2	A
100 µm																					•		103000020001	2	A
100 µm																						•	103000030001	28	A
85 µm													•										100 651	2	I
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

[1] Note: Please take into consideration the quantities required for the different sizes of the GENO-fine 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.

BECOME A WATER EXPERT!

Safety devices

Installation situation protectliQ:A with pureliQ:AD

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.

Safety devices

Safety device protectliQ:A

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 equiped 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
Order no. (RG-A)	126 400	126 405	126 410	126 415

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 device		Liquid category				
		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 back-flow. 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

Euro system separator GENO-DK 2-Maxi

Euro system separator GENO-DK-Maxi

Safety Devices

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$_v$ 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/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$_v$ 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

grünbeck

grünbeck

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.

Euro system separation device GENO-G5 [R]	¾"
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
Order no. (RG-B)	134 100

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.

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

Dosing technology

Exact dosing for the protection of your drinking water pipes

In combination with the **exaliQ mineral solutions**, Grünbeck's **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. Some of these natural mineral substances can also prevent the precipitation of scale. For the safety you deserve! Subject to the respective application, the **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 occur, can be protected as well.

Dosing system exaliQ:KC6

When heated, hard water precipitates scale, which settles in the pipes. This can lead to clogging and energy losses and might damage fittings. Depending on the water quality and the condition of the pipework, corrosion can cause expensive damage. The water must therefore be treated according to its natural composition and intended use in order to prevent scaling and protect against corrosion.

What do you need?	Dosing Systems exaliQ	Water Softeners softliQ
Anti-scaling for cold and warm water pipes	✅	✅
Soft water • savings in detergents • effective protection against scaling in showers & at tap aerators • reliable protection against scaling in washing machines and kitchen appliances (e.g. coffee maker, tea maker, etc.)	❌	✅
24-hour continuous operation	✅	✅
Corrosion protection for metal pipes	✅	❌
Process	Dosing of minerals	Ion exchange

grünbeck

grünbeck

Dosing system exaliQ:KC6, compact system

Dosing system exaliQ:SC6, system with suction lance

Dosing system exaliQ:KC6-e, compact system

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

Dosing Technology

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/m³

Dosing system exaliQ	KC6	SC6	SC10	SC20	SC30
Nominal connection diameter [R]	1"	1"	1¼"	1½"	2"
Max. operating range max. [m³/h] [1]	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

[1] 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 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 reqired. 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/m³

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 [m³/h][1]	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

[1] 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 GENODOS DME[1]

NEW

GENODOS DME Delta-p[1, 2]

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 retrofitted. 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 system 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^3
• 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 1¼"	R 1½"	R 2"	DN 80	DN 100	–
Standard capacity [m^3/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

[1] 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 ¼" for fixed piping on the soft water outlet of Delta-p		
For Delta-p 1"	185000010000	B
For Delta-p 1¼"	185000020000	B
For Delta-p 1½"	185000030000	B
For Delta-p 2"	185000040000	B
Insert with injection point G ¼" for connection kit Delta-p[3]		
For Delta-p 1" - 1¼"	Injection point already integrated in connection kit	
For Delta-p 1½" - 2"	185000050000	B

NEW

[1] The disposable canister is not included in the scope of supply.
[2] Delta-p not included in the scope of supply.
[3] For connection kit Delta-p, refer to page 45.

grünbeck

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 the German Drinking Water Oridinance.
• 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/m³) of the dosing systems.
• Chemical resistance group for GENODOS: Standard.

Dosing Technology

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 **Note:** Copper and brass materials only suitable for warm water.	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)). *Consultation with Grünbeck recommended prior to initial application.*
exaliQ neutra	Increase of pH value	Galvanised pipes and copper materials/brass **Note:** Only use the mineral solution exaliQ neutra in combination with the stand-alone exaliQ dosing systems and GENODOS DME. The combined systems for softening (exaliQ:KC-e/SCe, GENODOS DME Delta-p) are not suitable.	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. *Consultation with Grünbeck recommended prior to initial application.*

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.

grünbeck

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 m³
  (one bottle of exaliQ is sufficient for the treatment of 30 m³ 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 m³
  (1 x 15 litres of exaliQ is sufficient for the treatment of 150 m³ of drinking water)
- Stackable 60-litre canister, recommended for a water consumption/year of > 600 m³
  (1 x 60 litres of exaliQ is sufficient for the treatment of 600 m³ of drinking water)

Mineral solution	Order no. (RG-I)
15-litre canister	
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)
60-litre canister	
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.

BECOME A WATER EXPERT!

grünbeck

Water softeners for residential applications

1 mm of scale deposits ≙ 10 % more energy consumption!

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.

Recommended by experts

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.

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 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/) 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-I).**

Calcium carbonate mass concentration[1] [mmol/l]		Category	Measures at Δ ≤ 60 °C	Measures at Δ > 60 °C
≥ 2.5 (corresponds to ≥ 14 °dH)		hard	stabilisation or softening recommended	stabilisation or softening
≥ 1.5 up to < 2.5 (corresponds to ≥ 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)

[1] Refer to § 9, clause 2 of the Law on Detergents and Cleaning Agents

For Starters   For Pros   For Leaders   For Performers   For Experts   + 99.99 % ANTI-GERM PROTECTION

Softening Residential

	softliQ:SD18	softliQ:SD21	softliQ:SD23	softliQ:MD32	softliQ:MD38	softliQ:PB20
Water softener	✓	✓	✓	✓	✓	✓
Application recommendation from ... to ... people	1 – 4 people	1 – 9 people	1 –12 people	1 – 20 people	1 – 30 people	up to 5 people
Regeneration salt supply [kg]	35	35	35	95	95	95
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	—	—	—	—	—	✓

Specifications
- Dimensions (w x h x d)
  360 x 815 x 430 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:SD

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 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.

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

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
Order no. (RG-A)	**189 100**	**189 200**	**189 300**

· Accessories: Please refer to page 41.

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

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.

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

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
Order no. (RG-A)	**187 400**	**187 450**

· Accessories: Please refer to page 41.

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

grünbeck

Water softener softliQ:PB20

Water softener softliQ:PB20 with additional Grünbeck hygiene technology

Twin water softener with additional adsorber unit[1] 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.

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

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
Order no. (RG-A)	**525 460**

[1] For more information on the process of Grünbeck's hygiene technology, please refer to pages 50/51.

· Accessories: Please refer to page 41.

- For elevated installation of softliQ:SD water softeners on the wall
- In case of little floor space
- In case water pipes and drain connections are located at a higher level
- Provides additional storage space below the system

NEW

Exemplary illustration of wall bracket softliQ SD with softliQ system and regeneration salt supply

Exemplary illustration of installation kit softliQ with softliQ system and pureliQ filter

Softening Residential

Accessories for water softeners

Accessories	softliQ:SD18	softliQ:SD21	softliQ:SD23	softliQ:MD32, softliQ:MD12i	softliQ:MD38	softliQ:PB20	safeliQ:EB30	WINNI-mat VGX	Weichwassermeister GSX	Order no.	RG-
Connection angle 1 pair for cramped installation positions, connection hoses can be laid much closer alongside the system	–	–	•	•	–	•	•	•	•	187 865	A
Double screw connection 1¼" For direct connection of the filter (pureliQ or BOXER X) to the connection block of the water softener	•	•	•	•	–	•	•	•	•	115 334	B
Delivery pump for regeneration water 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
Drain connection DN 50 with siphon according to DIN 1717 for small water softeners, backwash filters and system separators[2]	•	•	•[1]	•[1]	•[1]	•	•	•	•	188 875	A
Supplementary blending valve To generate a second blending hardness (e.g. for a separate pipe towards the kitchen, for technical applications, etc.)	•	•	•	•	–	–	•	•	•	187 870	A
Supplementary soft water outlet To easily branch off a 0 °dH (0 mol/l) pipe	•	•	•	–	•	•	•	•	•	187 875	A
Extension kits for connection hoses											
Extension kit for connection hoses DN 22	•	•	•	–	–	–	•	•	•	187 860e	B
Extension kit for connection hoses DN 25	–	–	•	•	–	•	–	–	–	187 660e	B
Extension kit for connection hoses DN 32	–	–	•	•	–	–	–	–	–	187 680e	B
Insulation kit With the insulation kit, the system's connection equipment is insulated properly and professionally											
Insulation kit softliQ:SD	•	•	•[1]	–	–	–	•	•	•	188 870	A
Installation kit softliQ[3] 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
Wall bracket softliQ:SD	•	•	•	–	–	–	–	–	–	189 895	B

NEW (Installation kit softliQ)

NEW (Wall bracket softliQ:SD)

[1] Already included in the scope of supply.
[2] For maximum flow rates and application limits, please refer to the product data sheet and the operation manual.
[3] 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.

Water Softeners for Trade and Industry

Selection Table – Water Softeners

System designation	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)	up to 4 people	up to 9 people	up to 12 people	up to 20 people	up to 30 people	Order no.	Page
				Application recommendation by Grünbeck						
softliQ/Weichwassermeister systems										
softliQ:SD18	1	1.8	3.0	•	–	–	–	–	189 100	38
softliQ:SD21	1	2.1	3.5	•	•	–	–	–	189 200	38
softliQ:SD23	1	2.3	3.8	•	•	•	–	–	189 300	38
softliQ:MD32 [1]	1	3.2	4.3	•	•	•	•	–	187 400	39
softliQ:MD38 [1]	1¼	3.8	5.6	•	•	•	•	•	187 450	39
softliQ:PB20	1	2.0	2.4	•	–	–	–	–	525 460	40
softliQ:MD12i	1	1.2	–	–	–	–	–	–	187 140	46
GENO-mat systems										
GENO-mat duo WE-X 65/50	1	2.6	3.3	–	–	–	–	–	186 100/186 200	47
GENO-mat duo WE-X 150/130	1	2.9	5.0	–	–	–	–	–	186 110/186 210	47
GENO-mat duo WE-X 300/230	1	3.5	8.3	–	–	–	–	–	186 120/186 220	47
GENO-mat duo WE-X 450/330	1½	4.9	10.0	–	–	–	–	–	186 130/186 230	47
GENO-mat duo WE-X 750/530	1½	6.3	15.8	–	–	–	–	–	186 140/186 240	47
Delta-p systems										
Delta-p 1" + Delta-p-I 1"	1	3.0	5.0	–	–	–	–	•/–	185 100/185 200	44/45
Delta-p 1¼" + Delta-p-I 1¼"	1¼	5.0	8.3	–	–	–	–	•/–	185 110/185 210	44/45
Delta-p 1½" + Delta-p-I 1½"	1½	8.0	13.3	–	–	–	–	•/–	185 120/185 220	44/45
Delta-p 2" + Delta-p-I 2"	2	12.0	20.0	–	–	–	–	•/–	185 130/185 230	44/45

[1] 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.
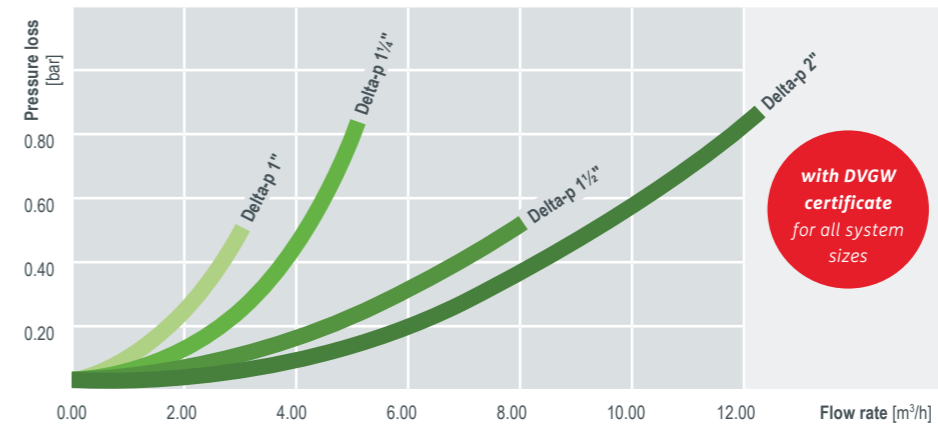
Triple water softeners Delta-p

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", 1¼", 1½" 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.

grünbeck

Delta-p 1"

Delta-p 2"

Delta-p 2" on pedestal

Connection kit Delta-p 1½ - 2", installation length 260 mm

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][1]	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][2]	65	65	180	180
Salt consumption per regeneration, approx. [kg]	1.5	2.5	5.2	7.2
Order no. Delta-p (RG-B)	185 100	185 110	185 120	185 130
Order no. Delta-p-I (RG-B)	185 200	185 210	185 220	185 230

[1] 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).
[2] For larger salt dissolving tanks, please inquire.

· The drain connection is NOT included in the scope of supply. Please refer to page 45.

Water softeners Delta-p/Delta-p-I

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-I	1"	1¼"	1½"	2"
Dimensions (w x h x d) [mm][1]	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][2]	410	410	570	570
Height of salt dissolving tank [mm][2]	670	670	860	860
Order no. Delta-p (RG-B)	185 105	185 115	185 125	185 135
Order no. Delta-p-I (RG-B)	185 205	185 215	185 225	185 235

[1] Dimensions without salt dissolving tank.
[2] Salt dissolving tank not mounted on pedestal.

Accessories Delta-p	Order no. (RG-B)
Connection kit Delta-p 1" - 1¼", installation length 190 mm [3]	185 807
Connection kit Delta-p 1½" - 2", installation length 260 mm [3]	185 823
Connection kit Delta-p-I 1" - 1¼", installation length 190 mm [3]	185 808
Connection kit Delta-p-I 1½" - 2", installation length 260 mm [3]	185 824
Pedestal for Delta-p 1" - 1¼" (also for Delta-p-I)	185 820
Pedestal for Delta-p 1½" - 2" (also for Delta-p-I)	185 825
Communication module DE200 Profibus	185 890
Drain connection DN 50 acc. to DIN EN 1717, including siphon for Delta-p	185 775

[3] 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[4]	Order no. (RG-B)
Screw connection for connection block Delta-p 1"	185 846
Screw connection for connection block Delta-p 1¼"	185 847
Screw connection for connection block Delta-p 1½"	185 848
Screw connection for connection block Delta-p 2"	185 849

[4] 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.

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 (0.02 mmol/) 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 (0.02 mmol/). 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 (5.4 mmol/l)) 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] [1]	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
Order no. (RG-B)	187 140

[1] The max. continuous flow decreases in case of raw water hardnesses of > 15 °dH (5.4 mmol/l)

· **Accessories: please refer to page 41.**

Specifications

- Full salting for residual hardness of < 0.1 °dH
  (0.02 mmol/l)
  (GENO-mat duo WE-X 65, 150, 300, 450, 750)
- Economy salting for residual hardness ≥ 2.0 °dH
  (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 programmable input. Control unit with LCD graphic display (backlit), integrated SD card to record operating data. Contact water meter with water meter screw connections.

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_v value Δp = 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 ≥ 2.0 °dH (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] [1]	3.3	5.0	8.3	10.0	15.8
K_v value Δp = 1.0 bar [m³/h] [1]	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

[1] In case of a raw water hardness of 20 °dH (3.5 mmol/l) and a soft water hardness of 8 °dH (1.4 mmol/l).

Softening
Trade/Industry

Connection kit 1¼"

Mechanical blending valve 1¼"

Connection kits for water softeners 1", 1¼" and 1½"

Connection kits 1", 1¼" and 1½"	Connection kits 1"-I, 1¼"-I and 1½"-I
Consisting of:	**Consisting of:**
• Connection fitting 1", 1¼" and 1½" with sampling valves	• Connection fitting 1"-I, 1¼"-I and 1½"-I with sampling valves
• Installation length 190 mm without screw connection	• Otherwise identical to connection kits 1", 1¼" and 1½", without overflow valve, however
• 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	

	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 1¼"		–	•	•	–	–	–	–	–	–	–	185 530
Connection kit 1½"		–	–	–	•	•	–	–	–	–	–	185 545
Connection kit 1"-I		–	–	–	–	–	•	•	–	–	–	185 505
Connection kit 1¼"-I		–	–	–	–	–	–	–	•	•	–	185 520
Connection kit 1½"-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 1¼"	**126 015**

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**

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 6023) 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 50.)

UV light

The devitalising effect of the UV light is due to the application of a special kind of lamp whose light – similar to sunlight – has a disinfecting effect. For UV systems (e.g. violiQ:UV) for disinfection, please inquire.

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-Baktox**) or a continuously generated disinfection solution (chlorine dioxide).
• Dosing of GENO-Chlor A (**GENODOS DM-T**)
• Dosing of GENO-Baktox (**GENODOS DM-B/BO**)
• Generation and dosing of chlorine dioxide (**GENO-Baktox 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
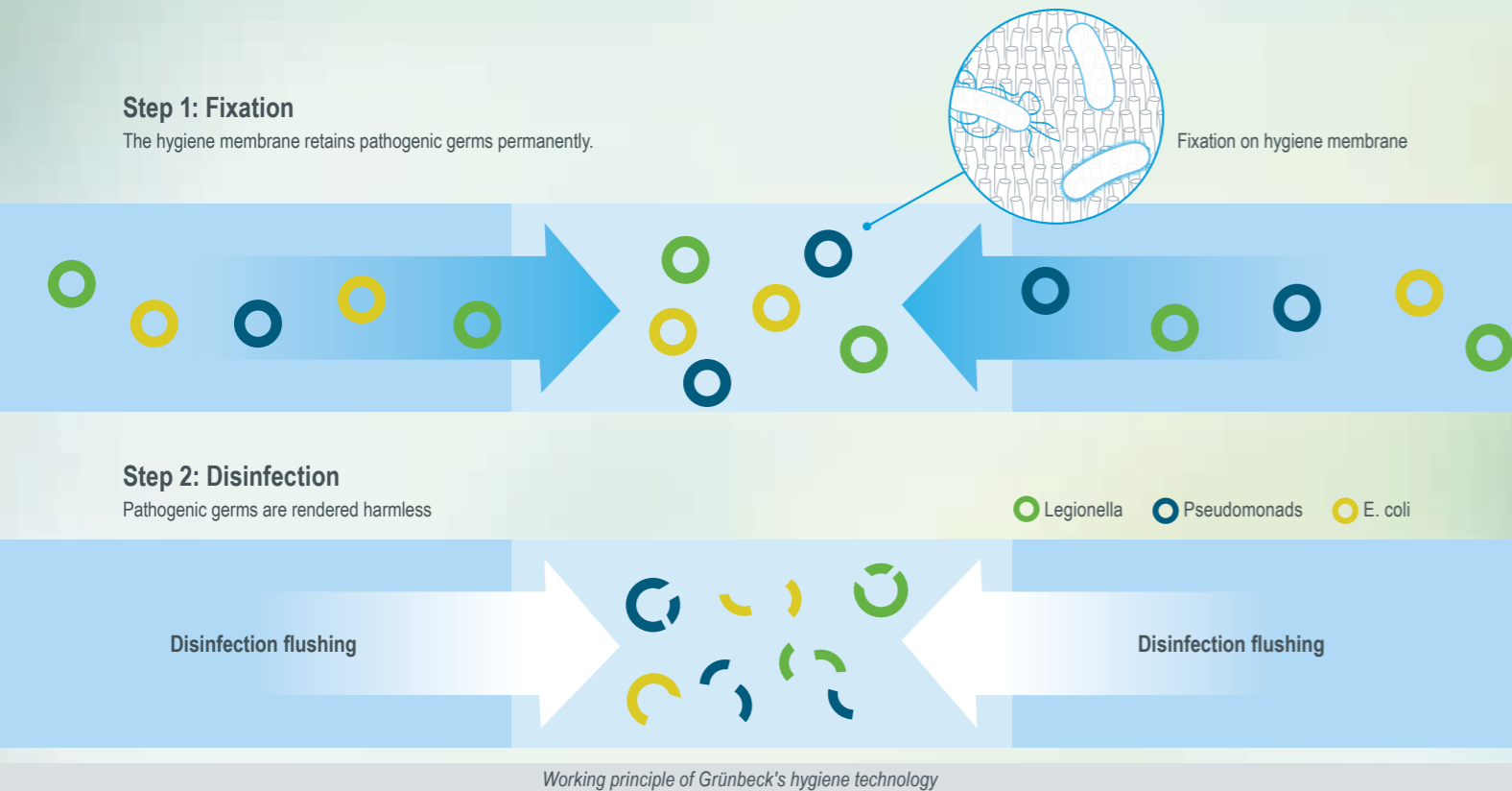
Working principle of Grünbeck's hygiene technology

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 prohylactic 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.

99.99 %
ANTI-GERM
PROTECTION

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[1]
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
Order no. (RG-A)	**525 410**

[1] *Proof of the protection against germ growth verified by TZW: DVGW-Technologiezentrum Wasser (German DVGW Technology Centre for Water)*

· **Accessories: Please refer to page 41.**

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

Sales only after consultation with Grünbeck. Water analysis required!

GENODOS DM-T 6

GENODOS DM-T 20

Sales only after consultation with Grünbeck. Water analysis required!

GENODOS DM-B 6[1]

GENODOS DM-B 10[1]

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

Dosing system GENODOS	DM-T 6	DM-T 10	DM-T 20	DM-T 30	DM-T 80	DM-T 100
Water meter [1]	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	163000120000	163000130000	163000140000	163000150000

[1] With contactor as submerged type.

Disinfectant	Order no. (RG-B)
GENO-Chlor A (20 litres) for all pipes, except for stainless steel[2]	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

[2] 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 m³ in case of standard dosing (DM-B, DM-BO)
- a water volume of 1 m³ 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 indiviual 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)[1]	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

[1] GENO-Baktox as well as water test kit not included in scope of supply.
· For disinfectants, please refer to page 52.
· For dosing system GENODOS type DM-B 6 (order no. 163 820), only 3-litre canisters are suitable.

Dosing system MOBIdos

Disinfectants

Oxidant GENO-oxi plus

Water test kit for iron

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-Baktox 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
Order no. (RG-B)	**160 150**

Disinfectants and accessories	Order no. (RG-B)
GENO-Baktox (3 litres)	**170 450**
GENO-Baktox (10 kg)	**170 460**
GENO-Baktox (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**
Cleaning agent GENO-clean CP (10 x 1 litre)	**170 022**

· For systems for continuous disinfection in drinking water systems by means of UV systems, please inquire.

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

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 water treatment cost-effective.

For an overview of our products for private water supply or for a corresponding quotation, please inquire.

Accessories/Consumables	Order no. (RG-B)
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[1]	**170 016**
GENO-special granulate 5 kg[1]	**170 017**
Potassium permanganate 5 kg (standard)[1]	**170 041**

[1] 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).

Hygiene and Disinfection

Heating water

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 by the installer of the boiler and the piping of the heating system as well as the **filling section thermaliQ:FB2**.

Step 2: Initial filling of the heating system with optimum demi water
• Connection of the mixed bed cartridge **desaliQ:MB** or **desaliQ:BA** 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 **therrmaliQ 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 adapte**r – which is available directly in combination with the cartridge – as well as the **desaliQ connection adapter** are required.
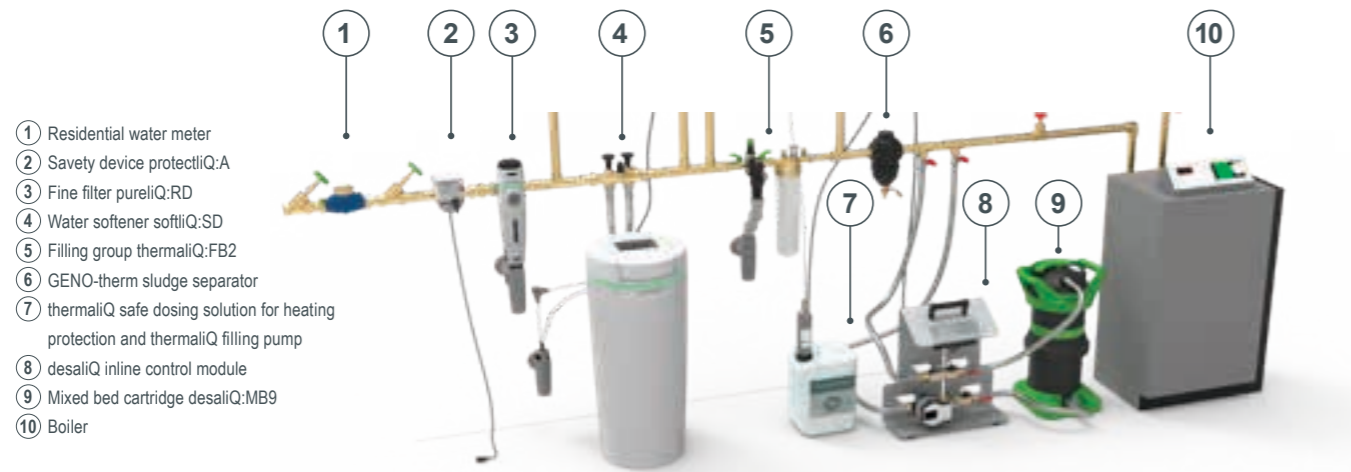
1. Residential water meter
2. Savety device protectliQ:A
3. Fine filter pureliQ:RD
4. Water softener softliQ:SD
5. Filling group thermaliQ:FB2
6. GENO-therm sludge separator
7. thermaliQ safe dosing solution for heating protection and thermaliQ filling pump
8. desaliQ inline control module
9. Mixed bed cartridge desaliQ:MB9
10. Boiler

Filling section thermaliQ:FB2

desaliQ connection adapter

Filling cartridge desaliQ:HB2

Filling cartridge desaliQ:HB4 with bottle adapter

Mixed bed cartridge desaliQ:MB5

Mixed bed cartridge desaliQ:MB9

Mixed bed cartridge desaliQ:BA6

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.

Filling group thermaliQ:SB13

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

Filling cartridge desaliQ:HB2

Cardboard box for support

Filling cartridge desaliQ:HB4 with bottle adapter

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 µS/cm, the green light-emitting diode is flashing, between 10 – 50 µS/cm, the yellow diode is flashing and starting from 50 µS/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, 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. deasliQ 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 [m³/h]	1.3	–	–	–
Nominal flow (with cartridge) [m³/h]	–	0.2	0.2	–
Nominal flow (with adapter) [m³/h] [1]	–	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

[1] Depending on the filling cartridge or mixed bed cartridge used.

Filling cartridge desaliQ:HB

Cartridge for full demineralisation by means of mixed bed resin for connection to **treatment group thermaliQ:HB2** and **filling section thermaliQ:FB2**. It is 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** and **filling section thermaliQ:FB2**.

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 goup thermaliQ:HB2** or **filling section thermaliQ:FB2**, 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[1]	Order no. (RG-B)
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.	707 276

Accessories	Order no. (RG-B)
Mixed bed resin for filling cartridge desaliQ:HB4	707 680
desaliQ:HB4 bottle adapter	707 127
desaliQ hose kit	707 850

Sample calculation
- Conductivity of the raw water: 500 µS/cm
- Filling cartridge used: desaliQ:HB4
- 110/500 = 0.22 m³ (equals 220 litres at 50 µS/cm) → 220 litres of fully demineralised water at switch-off point 50 µS/cm

[1] For an illustration of the desaliQ connection adapter, please refer to page 57.

Mixed bed cartridge desaliQ:MB5

desaliQ resin bag

desaliQ inline filter module

desaliQ inline control module

desaliQ basic filling module

desaliQ mixed bed cartridge

Hot water resistant desaliQ:MB for new fillings, make-up water feed and circulation water treatment during operation.
Mixed bed ion exchanger system to demineralise water. Particularly suitable for the initial filling or make-up water feed of heating systems as well as for the treatment of the heating circuit during heating operation. The desaliQ:MB is 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** or with the **desaliQ inline filter module**. Quick replacement of the resin or filter module without any tools - even at the place of use. Cartridge made of high-grade, sturdy 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:MB5

In the desaliQ:MB5, either a resin bag for full demineralisation can be used, or a desaliQ inline filter module for filtration of the heating water.

desaliQ:MB9

The mixed bed cartridge desaliQ:MB9 enables the combination of a desaliQ resin bag and a desaliQ inline filter module for simultaneous filtration and full demineralisation of the heating water. Alternatively, two resin bags can be used to increase the demineralisation capacity.

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 the 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.

desaliQ:	MB5	MB9
Nominal connection diameter	¾"	¾"
Resin bag of 6 litres each	1	2
Capacity < 10 [µS/cm x m³]	135	320
Capacity < 50 [µS/cm x m³]	242	510
Nominal flow [m³/h]	0.5	0.9
Shipping weight [kg]	10	17
Max. water temperature [°C]	65	65
Order no. (RG-A)	707000060000	707455000000

Accessories	Order no.	RG-
desaliQ resin bags (2 bags of 6 litres each)	707 435	A
desaliQ hose kit	707 850	B
desaliQ inline filter module	707000010000	B
desaliQ inline replacement filter elements (6 pcs)	707000020000	B

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.

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
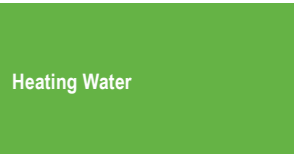
Heating Water

thermaliQ safe, 5 l; thermaliQ clean, 5 l

thermaliQ filling pump

Mixed bed cartridge desaliQ:BA6

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	¾"
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: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 ¾", nominal pressure PN 10, max. water temperature 80 °C.

desaliQ:BA[1]	6	12	13	16	20
Nominal connection diameter	¾"	¾"	¾"	¾"	¾"
Capacity < 10 [µS/cm x m³]	215	460	1,040	1,560	2,080
Capacity < 50 [µS/cm x m³]	340	800	1,650	2,475	3,300
Nominal flow [m³/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

[1] For connection to the treatment group or filling group by means of desaliQ connection apater, the desaliQ hose kit is required. Please refer to page 63.

Sample calculation
- Conductivity of the raw water: 500 µS/cm
- Cartridge used: desaliQ:BA6
- 215/500 = 0.43 m³ (equals 430 litres at 10 µS/cm)
- 340/500 = 0.68 m³ (equals 680 litres at 50 µS/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)
Softening cartridge version VARIO mini			
decaliQ:BA12 VARIO mini	max. 80 °C	90 m³ x mmol/l at < 0,02 mmol/l	707 765
decaliQ:BA16 VARIO mini[2]	max. 80 °C	180 m³ x mmol/l at < 0,02 mmol/l	707 785
Mixed bed cartridge version VARIO mini			
desaliQ:BA12 VARIO mini	max. 80 °C	460 [µS/cm x m³] < 10 µS/cm or 800 [µS/cm x m³] < 50 µS/cm	707 465
desaliQ:BA16 VARIO mini[2]	max. 80 °C	1,250 [µS/cm x m³] < 10 µS/cm or 1,615 [µS/cm x m³] < 50 µS/cm	707 485

[2] **Without** oval clip-lock-type lid (threaded lid with removable riser pipe).

Only while stocks last
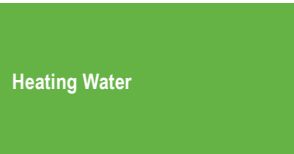
Heating Water

GENO-therm analysis case including test kit for molybdenum

Digital hand-held measuring device
for pH, conductivity and temperarture

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

Patented process

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

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

Heating Water

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 ¾"	707 124	B
Double screw connection ¾"	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
Calibration solution pH 9 (50 ml)	203629000100	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 ¾" male thread connection to quick-acting coupling	707 059e	B
Water test kit for pH value 7 - 14[1] (100 test strips)	170 147	B
Water test kit for sulphite 10 - 1,000 mg/l[1] (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[1] (100 determinations)	170 140	B
Refill kit of reagents for thermaliQ safe test kit	170 655e	A
Water softener HEH 9[2, 3]	190 570	
Refill exchanger resin (4 litres)	190 575	

[1] Measuring range
[2] Connection to treatment group thermaliQ:HB2 possible by means of desaliQ connection adapter (refer to page 59).
[3] 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)
Hose kits DN 20, union nut ¾", 1,5 m, 2 hoses, 2 double nipples, incl. seals	
straight/straight	707 840
straight/90°	707 845
Depth filter elements, 2 pcs in cardboard box	
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 dealiQ:BA/MB.

Products for heating water treatment

Product	Applications	Characteristics
GENO-safe A full heating protection	Warm water heating systems	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.
GENO-heating protection FSK	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: • Starting from 22 % of the system volume up to -10 °C • Starting from 35 % of the system volume up to -20 °C There is no corrosion protection for aluminium materials. Not suitable for application with tin, zinc or galvanised materials.
GENO-phos Nr. 1	Steam boiler systems and warm water heating systems as per VDI 2035 with metal pipes and radiators	Trisodium phosphate (granulate), precipitation of residual hardness, alkalinisation by means of pH increase, preparation with soft water. Not suitable for use in systems with aluminium materials.
GENO-phos Nr. 2	Steam boiler systems where alkalinity is too high	Sodium dihydrogen phosphate (granulate), to reduce high alkalinity, pH reduction, precipitation of residual hardness.
Sodium sulphite	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.

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

Full heating protection	Order no. (RG-I)
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

Full heating protection with anti-freeze protection	Order no. (RG-I)
GENO-heating protection FSK (20 kg)	180 230

Products to increase the pH value	Order no. (RG-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

Products to decrease the pH value	Order no. (RG-B)
GENO-phos Nr. 2 (granulate) [3.5 kg]	170 003
GENO-phos Nr. 2 (granulate) [25 kg]	170 053

Products to bind oxygen	Order no. (RG-B)
Sodium sulphite (granulate) [6 kg]	170 004
Sodium sulphite (granulate) [25 kg]	170 054
GENO-SW 2000 (liquid) [20 kg]	180 405

Combined product to increase the pH value and to bind oxygen	Order no. (RG-B)
GENO-SW 2040 (liquid) [25 kg]	180 440

Heating Water

Patented process

GENO-Neutra FNH-420-R[1]

GENO-Neutra KW65

GENO-Neutra NO-5

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 [1]
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 [2]	**180 355**
GENODOS suction lance, 750 mm	**118 505**

[1] The neutralisation agent GENO-Neutrox is not included in the scope of supply.
[2] The GENODOS suction lance 750 mm (order no. 118 505) is required here.

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**.

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 [1]	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**

[1] In addition, an inlet hose connection (DN 20) is included in the scope of supply.

Heating Water

GENO-Neutra NO-24

Waste water lifting system AH-300

Water test kit for total hardness °dH and °f

pH test strips

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 [1]		410 435
Overflow alarm switch	N-14, N-70, N-210, NO-5, NO-12, NO-24 [3], AF-5	410 680
Alarm delay [2]	N-14, N-70, N-210, NO-5, NO-12, NO-24 [3], 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

[1] 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.
[2] Only in combination with overflow alarm switch.
[3] For NO-24, two units are required.

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 [1]	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 [1] (100 determinations)	170 097
Water test kit for iron 0.0 - 0.8 and 1 - 10 mg/l [1] (30 determinations)	170 150
Water test kit for nitrate 0.0 - 500 mg/l [1] (100 test strips)	170 131
Water test kit for peroxide 0.5 - 25 mg/l [1] (100 test strips)	170 136
Water test kit for pH value 4.5 - 10 [1] (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 [1] (250 determinations)	170 103
Water test kit for ortho-phosphate 1 - 20 mg/l [1] (75 determinations)	170 554
Water test kit for pH value 4.5 - 10 [1] (100 test strips)	170 148
Water test kit for pH value 7 - 14 [1] (100 test strips)	170 147
Water test kit for pH value 0 - 6 / 4.5 - 10 / 7 - 14 [1] (3 boxes of 100 test strips each)	170 106
Water test kit for residual oxygen 0 - 100 ppb [1] (30 determinations)	170 144
Water test kit for sulphite 10 - 1000 mg/l [1] (100 test strips)	170 535
Water test kit for sulphite drip test 0.5 - 20 mg/l [1] (80 determinations)	170 107
Water test kit for GENO-heating protection FSK 1.00 - 1.10 g/cm³ [1]	170 141
Water test kit for molybdenum 5 - 250 mg/l [1] (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

[1] Measuring range

Water Monitoring

GENO-clean M, 12 kg

Products 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 technlogy! (DVGW leaflets W 557 and W 558 (draft)).

Products to remove scale and rust	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]	Order no.	RG-
GENO-clean M, 12 kg[1]		•	•	•	•	•	•	•	–	•	40	170 045	B
GENO-clean M, 1 litre[1]		•	•	•	•	•	•	•	–	•	40	170 047	B
GENO-clean CP, 10 x 1 litre		–	•	–	•	–	•	•	–	•	40	170 022	B
GENO-clean CP, 22 kg (18.3 litres)		–	•	–	•	–	•	•	–	•	40	170 028	B
GENO-Passivierungspulver (passivation powder), 3.5 kg		–	•	•	•	•	•	•	•	•	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

[1] 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
Filters		
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
Dosing		
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	943 161	942 161
Dosing systems GENODOS DM-B, MOBIdos	943 162	942 162
Dosing systems GENODOS DM-BO	943 163	942 163
Alternative anti-scaling		
GENO-K4	943 157	942 803
Water softeners with DVGW certification		
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
		(plus cost per hygiene element, RG-C)
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	
Water softeners without DVGW certification (incl. system separators)		
Single systems R 1"	943 122	942 122
Twin systems R 1"	943 125	942 125
Twin systems R 1½"	943 126	942 126

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

Commissioning and Maintenance

Devices, systems, services	Commissioning	Maintenance
Designation	Order no.	Order no.
GENO-therm		
Reusable GENO-therm cartridge,	943 702	942 702
mixed bed cartridge desaliQ:BA/MA/MB		
	(regeneration costs not included)	
AVRO-flex	943 820	942 820
Safety devices		
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
Hygiene technology		
safeliQ:EB	943 525	942 525
	(plus cost per hygiene element, RG-C)	
Heating technology		
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.*

Analyses packages	
Public water supply	943 911
Well water	943 912
Swimming pool water[1]	943 913
Dimensioning of reverse osmosis systems	943 914
Heating water	943 915
Local/district heating, biogas systems	943 916
Cooling water[1], 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

[1] *Swimming pool water and cooling water, open: For a detailled assessment, we recommend an addditional analysis of the filling and make-up water.*
· *Note: In individual cases, additional cost can occur for increased analysis efforts.*

Regeneration costs[2]	
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

[2] *Plus costs for roundtrip resp. roundtrip by shipping company*

Order no.	Item	RG-	Page
707055	GENO-therm solenoid valve, complete	B	66
707059e	Hose adapter from male thread ¾" to quick coupling	B	66
707124	Double nipple for F-NT and OV G ¾ x 28	B	66
707127	desaliQ:HB4 bottle adapter	B	59, 66
707150	Filling cartridge desaliQ:HB4 with adapter	B	59
707155	Filling cartridge desaliQ:HB4 without adapter	B	59
707190	Analysis case (pH value + conduct., total hardness, molyb.)	B	64
707192	Analysis case (pH value + conductivity, total hardness)	B	64
707276	desaliQ connection adapter	B	59
707435	desaliQ resin bags 2 x 6 l	A	60
707450	Mixed bed cartridge desaliQ:BA6	B	63
707455000000	Mixed bed cartridge desaliQ:MB9	A	60
707460	Mixed bed cartridge desaliQ:BA12	B	63
707465	Mixed bed cartridge desaliQ:BA12 VARIO mini	B	63
707470	Mixed bed cartridge desaliQ:BA13	B	63
707480	Mixed bed cartridge desaliQ:BA16	B	63
707485	Mixed bed cartridge desaliQ:BA16 VARIO mini	B	63
707490	Mixed bed cartridge desaliQ:BA20	B	63
707570	Depth filter element, 25 µm, 2 pcs in cardboard box	B	66
707575	Depth filter element, 50 µm, 2 pcs in cardboard box	B	66
707580	Depth filter element, 100 µm, 2 pcs in cardboard box	B	66
707585	Depth filter element, 150 µm, 2 pcs in cardboard box	B	66
707680	Mixed bed resin for filling cartridge desaliQ:HB4	B	59
707705	GENO-therm sludge separator DN 20, complete	B	65
707710	GENO-therm sludge separator DN 25, complete	B	65
707715	GENO-therm sludge separator DN 32, complete	B	65
707720	GENO-therm sludge separator DN 40, complete	B	65
707725	GENO-therm sludge separator DN 50, complete	B	65
707745	Filling cartridge desaliQ:HB2	B	59
707750	Filling group thermaliQ:SB13	B	58
707755	Treatment group thermaliQ:HB2	B	58
707760	Filling section thermaliQ:FB2	B	58
707765	Softening cartridge decaliQ:BA12 VARIO mini	B	63
707770	Filling section thermaliQ:FB13i	B	58
707785	Softening cartridge decaliQ:BA16 VARIO mini	B	63
707840	Hose kit DN 20 straight/straight	B	66
707845	Hose kit DN 20 straight/90°	B	66
707850	desaliQ hose kit DN 12, 1.5 m (2 pcs)	B	59, 60, 66
752250	Mobile reverse osmosis system AVRO-flex 400	B	65
82552110	System log for warm water heating system		66

YOUR LOCAL WATER EXPERTS!

Company profile

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoechstaedt
GERMANY

General manager
Dr. Günter Stoll

Staff
700

Sales organisation
Subsidiaries and authorised representations in Germany, representations in all EU member countries as well as associated partners world-wide
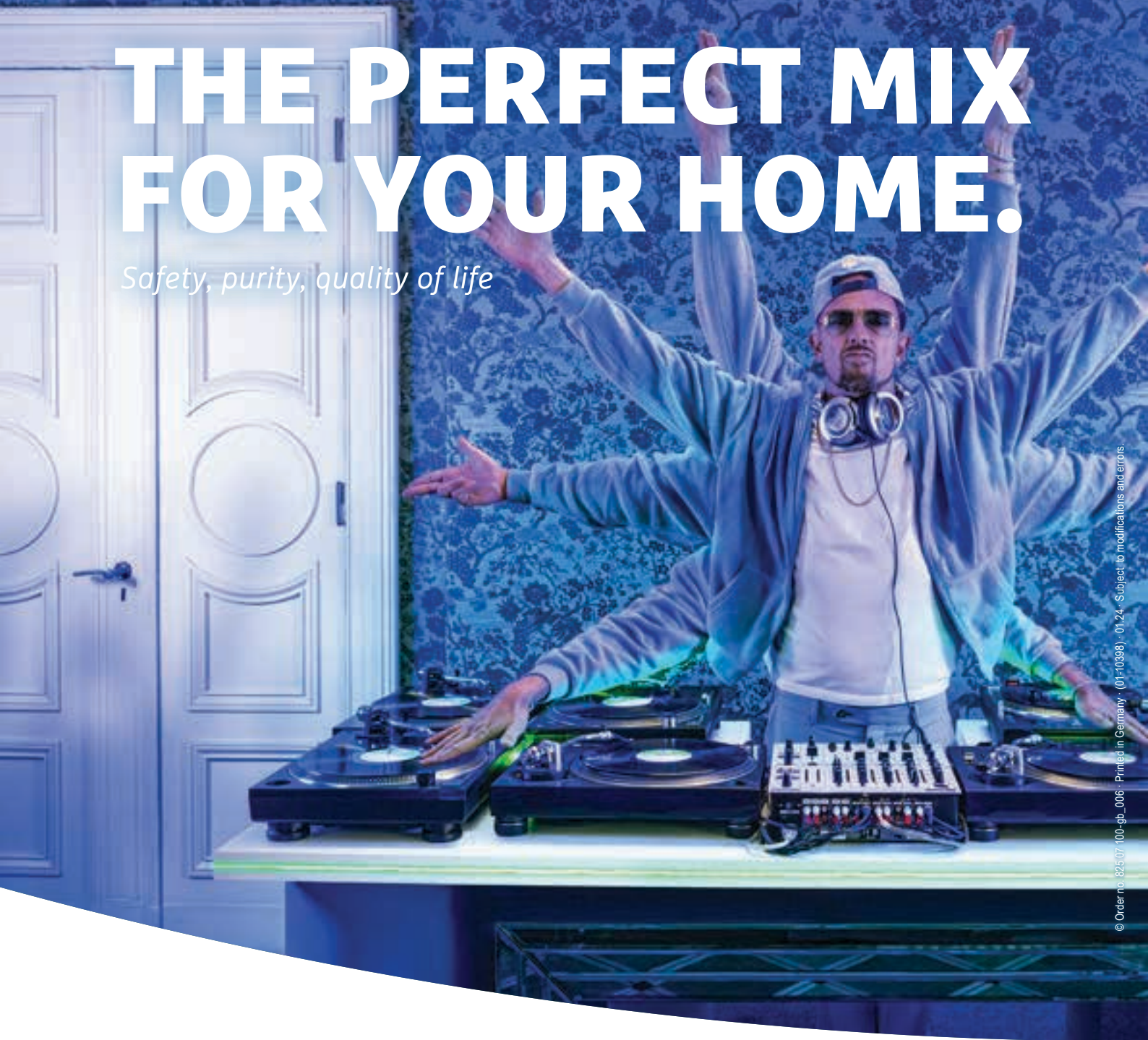
Certifications
DIN EN ISO 9001, DIN EN ISO 14001, SCC° by TÜV Management Service, OHRIS

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

THE PERFECT MIX FOR YOUR HOME.

Safety, purity, quality of life

QUALITY
MADE IN
GERMANY

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoechstaedt
GERMANY

+49 9074 41-0
+49 9074 41-100

info@gruenbeck.com
www.gruenbeck.com

More information at
www.gruenbeck.com

German Standards
BRAND OF
THE CENTURY
2022

grünbeck | FCA

Exclusive Partner

TÜV SÜD   TÜV SÜD

A company certified by TÜV SÜD in accordance
with DIN EN ISO 9001, DIN EN ISO 14001 and SCC
www.tuvsud.com/ms-cert

© Order no. 825 07 100-gb_006 · Printed in Germany · (01-10398) · 01.24 · Subject to modifications and errors.