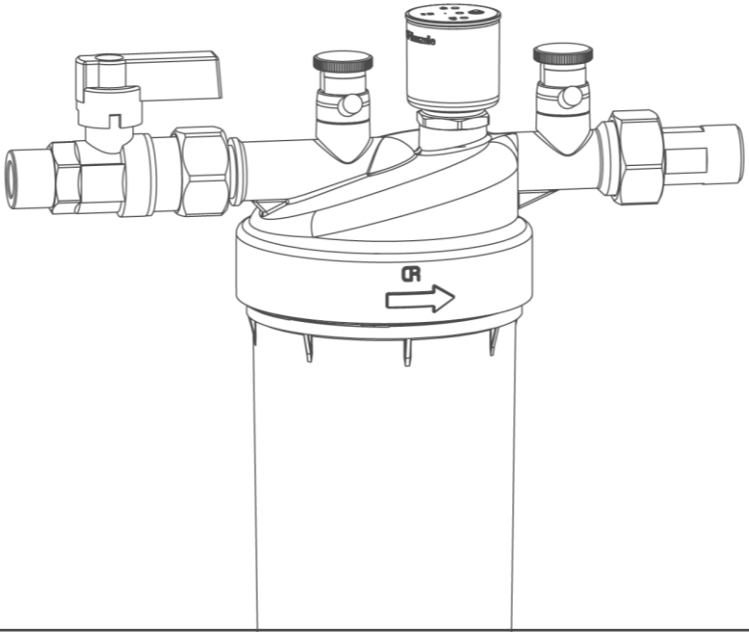
We understand water.



Treatment group | thermaliQ:HB2

Operation manual

grünbeck

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Availability
Monday to Thursday
7:00 am - 6:00 pm

Friday
7:00 am - 4:00 pm

Original operation manual
Edition of the manual: October 2022
Order number: TD3-GH000en_025

Table of contents

1 About this manual

1.1 Other applicable documents

The following documents shall be deemed as applicable documents for the treatment group thermaliQ:HB2:

- The manuals of all accessories used.

1.2 Target group

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

1.3 Storage of documents

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

1.4 Symbols used

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

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

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

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

1.5 Typographical conventions

The following typographical conventions are used in this manual:

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

1.6 Validity of the manual

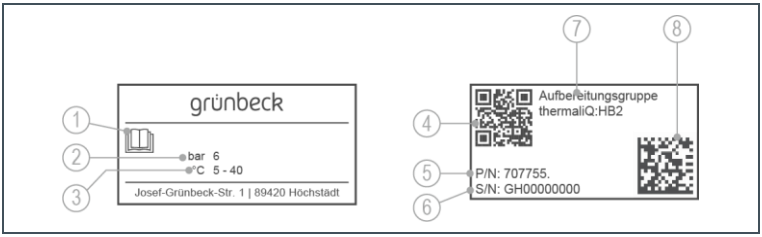
This manual applies to the following products:

- Treatment group thermaliQ:HB2

1.7 Type plate

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

► Enter the necessary information in the table below to have it readily available when necessary.



Item	Designation	Item	Designation
1	Observe operation manual	2	Max. operating pressure
3	Ambient temperature	4	QR code
5	Order no.	6	Serial no.
7	Product designation	8	Data matrix code

- Product designation: Treatment group thermaliQ:HB2
- Order no.: 707 755
- Serial no.: _____

2 Safety

2.1 Safety measures

- Carefully read this manual before operating your product.
- Install the product in a frost-free room. Otherwise, the product may suffer irreparable damage. Water damage may occur as a result.
- Only use genuine spare parts for maintenance or repair. If unsuitable spare parts are used, the warranty for your product will be void.
- Only have persons working on your product that have read and understood the present manual and that are qualified to do such work due to their vocational training.
- Only operate the product if all components are installed properly.
- Safety equipment must never be removed, bridged or otherwise tampered with.

2.2 Technical safety instructions

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

CAUTION: Type and source of danger

- Possible consequences

► Preventive measures

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

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

2.3 Regulations

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

- Statutory regulations on environmental protection
- Provisions of the employers' liability insurance companies

2.4 Responsibilities of the qualified specialist

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

- Only perform activities described in this manual.
- Perform all activities in accordance with all applicable standards and regulations.

- Brief the owner/user on the function and operation of the product.
- Advise the owner/user of the maintenance of the product.
- Inform the owner/user about possible dangers that can arise during the operation of the product.

2.5 Responsibilities of the owner/user

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

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

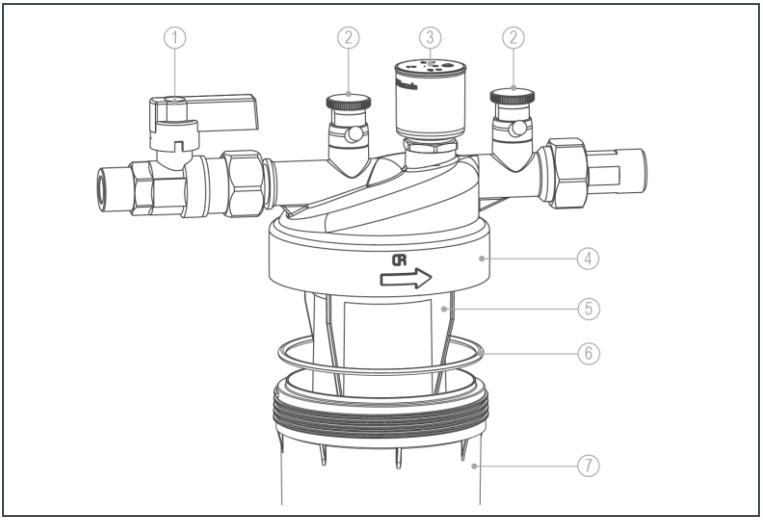
3 Product description

3.1 Intended use

The treatment group thermaliQ:HB2 is designed for the full demineralisation of raw water for the initial filling or make-up water feed of heating systems.

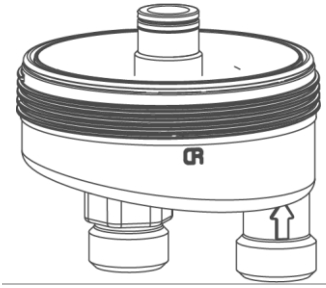
The treatment group thermaliQ:HB2 may only be installed in horizontal pipes.

3.2 Product components



Item	Designation	Item	Designation
1	Shut-off valve	2	Deaeration valve
3	Conductivity measuring cell	4	Type plate
5	Filling cartridge	6	O-ring
7	Plastic cylinder		

3.3 Accessories

Illustration	Product	Order no.
	**Filling cartridge desaliQ:HB4 with bottle adapter** For full demineralisation of water for heating systems.	**707 150**
	Filling cartridge desaliQ:HB4 without bottle adapter For full demineralisation of water for heating systems.	**707 155**
	**desaliQ connection adapter** Adapter to connect the filling cartridge desaliQ:HB4 to the treatment group thermaliQ:HB2.	**707 276**
	desaliQ hose kit 2 drinking water hoses of 1.5 m in length to connect free-standing full demineralisation units to the treatment group thermaliQ:HB2.	**126 400**

3.4 Functional description

3.4.1 Physical

The raw water enters the filling cartridge desaliQ:HB2 via the shut-off valve and flows through the filling cartridge's mixed bed

from top to bottom. The water is demineralised by way of ion exchange.

The demineralised water passes the conductivity measuring cell and flows into the heating system.

A non-return valve at the outlet of the treatment group prevents the water from flowing back from the heating system.

3.4.2 Chemical

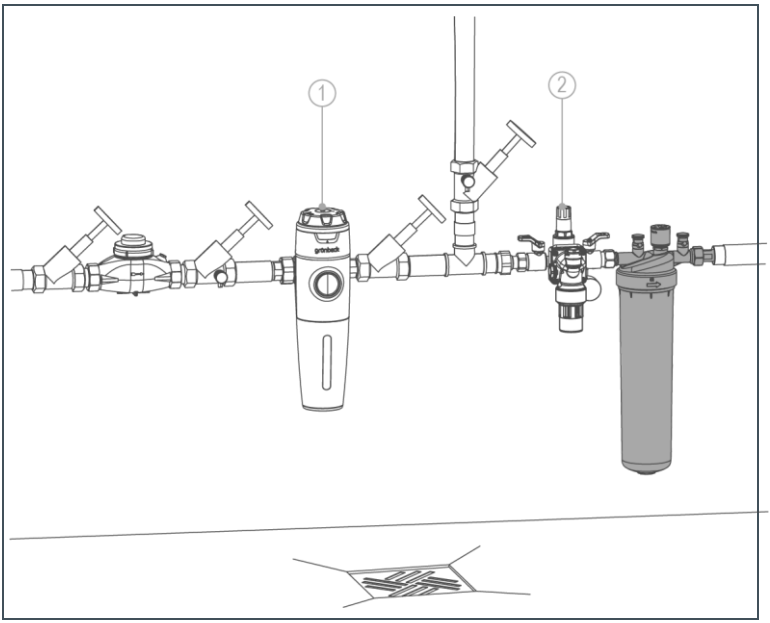
Mixed bed resins consist to one part of a highly acid cation exchanger resin and to the other part of a highly alkaline anion exchanger resin. In the mixed bed cartridges, these two components are present in a completely mixed state.

The cation exchanger resin removes all positively charged ions, the so-called cations, from the raw water. All cations contained in the water, such as calcium, magnesium, sodium, are exchanged for H^+ ions.

In the demineralisation process, the anion exchanger resin is used to filter off the negatively charged ions, the so-called anions. All anions contained in the water, such as nitrate, phosphate, sulphate, chloride and hydrogen carbonate, are exchanged for OH^- ions.

Full demineralisation removes almost all undesired components from the inlet water. Thanks to the highly alkaline anion exchanger resin, silicic acid and carbon dioxide are also filtered off. The H^+ and OH^- ions generated in the exchange process combine to H_2O. The result of full demineralisation is pure water.

4 Installation



Item	Designation	Item	Designation
1	Drinking water filter pureliQ	2	Filling group thermaliQ:SB13

4.1 Requirements in relation to the installation site

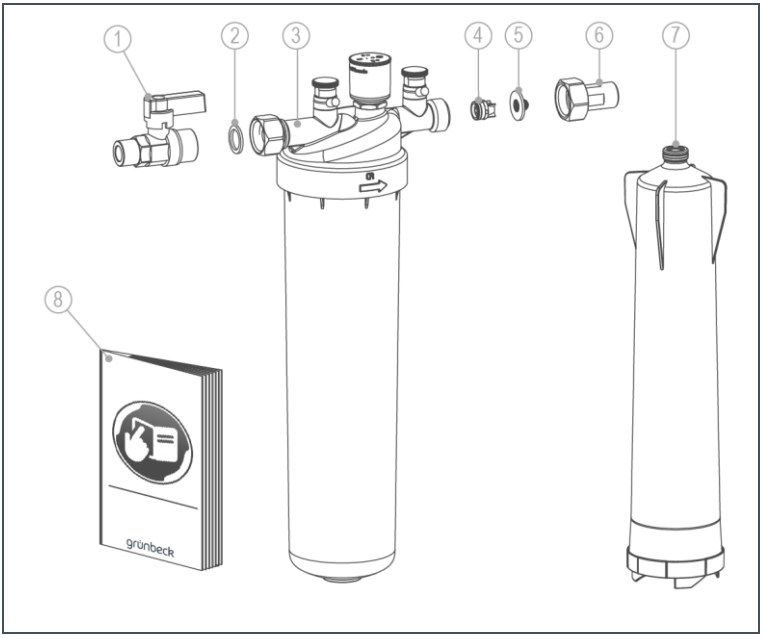
Observe local installation directives, general guidelines and technical specifications. The installation site must be frost-proof and ensure the system's protection from chemicals, dyes, solvents and vapours.

A floor drain must be provided in the installation room. If no floor drain is available, an appropriate safety device must be installed in order to prevent water damage.

A drinking water filter, e.g. pureliQ:K (refer to chapter 4, item 1) must be installed upstream of the product.

A system separator, e.g. filling group thermaliQ:SB13 must be installed upstream of the product as per DIN EN 1717 (refer to chapter 4, item 2).

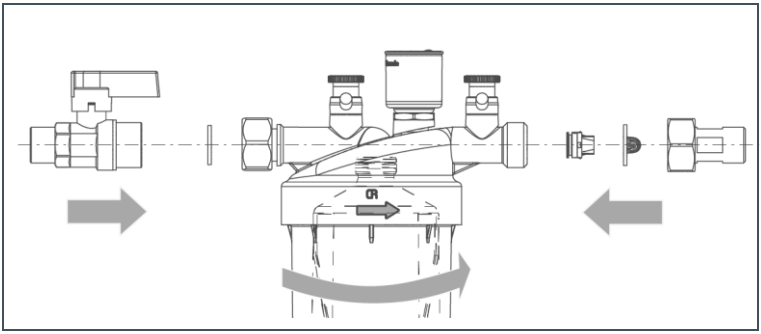
4.2 Checking the scope of supply



Item	Designation	Item	Designation
1	Shut-off valve	2	Flat gasket
3	Treatment group	4	Non-return valve
5	Flat gasket with cap sieve	6	Water meter screw connection
7	Filling cartridge desaliQ:HB2	8	Operation manual

► Check the scope of supply for completeness and possible damage.

4.3 Installing the product



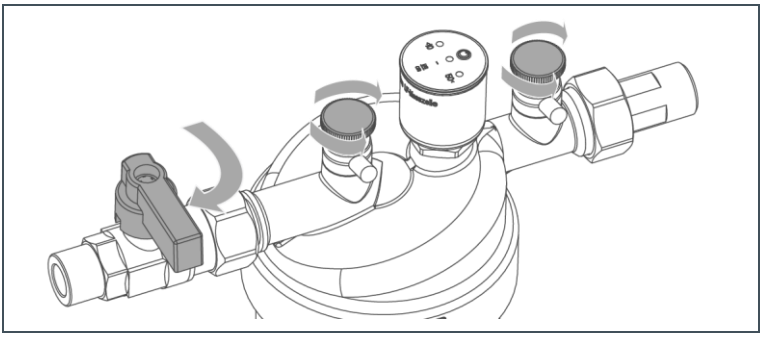
1. Install the shut-off valve at the inlet side of the treatment group.
2. Install the water meter screw connection at the outlet side of the treatment group.
3. Install the treatment group in between without any mechanical stress. On the inlet side, use the flat gasket and on the outlet side, use the flat gasket with cap sieve.
4. Install the filling cartridge and the plastic cylinder. The plastic cylinder does not have an end stop. Turn it until the required pressing is done.

» The installation of the product is completed.

5 Start-up

5.1 Starting up the product

5.1.1 Deaerate the product.



1. Open both vent valves.
2. Open the shut-off valve.

As soon as no air escapes any longer:

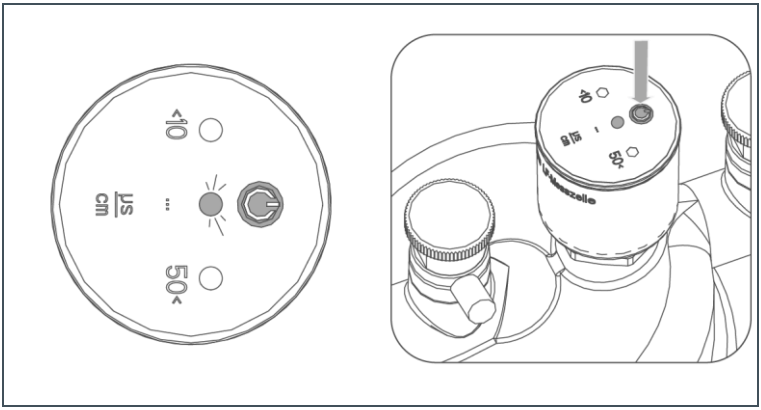
3. Close the vent valve on the inlet side.
4. Close the vent valve on the outlet side.
5. Close the shut-off valve.

» The product is deaerated.

5.1.2 Filling the heating system

Depending on the size of the heating system, the filling process may take some time.

Depiction of conductivity measuring cell



1. Open the shut-off valve.
2. Visually check for leaks.
3. Press the button of the conductivity measuring cell.

» The LED of the conductivity measuring cell is flashing, the conductivity measuring cell is activated.

» You may fill the heating system.

4. Close the shut-off valve as soon you have reached the desired pressure.

» The heating system is filled.

» The conductivity measuring cell switches off automatically.

5.2 Handing over the product to the owner/user

When handing over the product, proceed as follows:

1. Inform the owner/user how the water treatment group works.
2. Hand over all documents to the owner/user for keeping.
3. Use the manual to brief the owner/user and answer any questions.
4. Inform the owner/user about the need for inspections and maintenance.

6 Operation

6.1 Functional check of the conductivity measuring cell

► Press the button of the conductivity measuring cell.

» The measuring cell is activated.

» After the activation, an LED is flashing.

The conductivity measuring cell switches off after a period of 45 minutes.

Display of the conductivity measuring cell

LED is flashing	Conductivity of the fully demineralised water
green	< 10 µS/cm
yellow	10 – 50 µS/cm
red	< 50 µS/cm

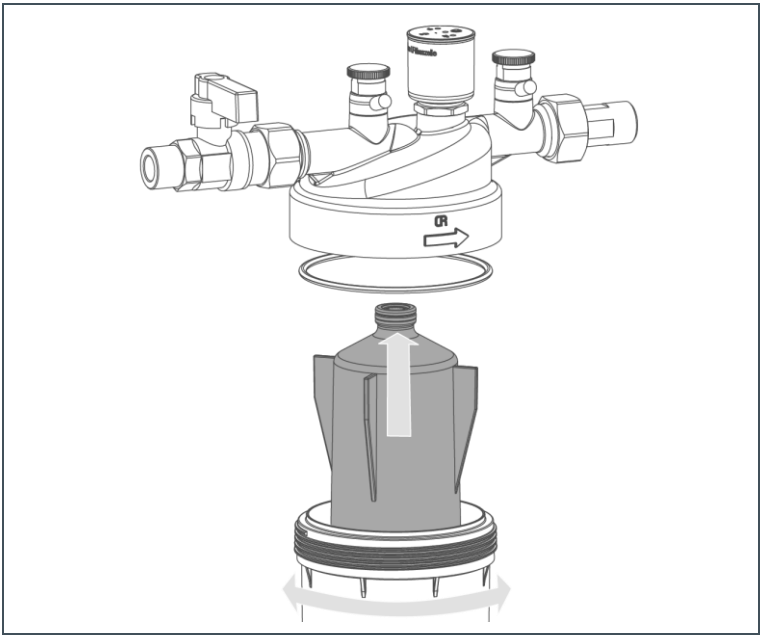
When the LED is flashing red, the filling cartridge is exhausted.

6.2 Installation/replacement of the filling cartridge

To replace the filling cartridge, proceed as follows:

1. Close the valve on the inlet side.
2. Open the vent valves.

» The treatment group is depressurised.

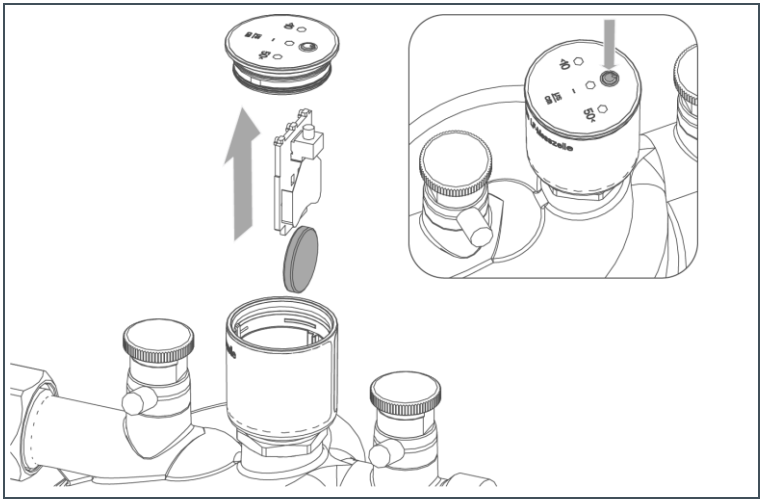


3. Dismantle the plastic cylinder (turn left).
4. Replace the exhausted cartridge by a new cartridge.
5. Remount the plastic cylinder (turn right).

» The treatment group is operational.

6. Put the treatment group into operation (refer to chapter 5.1).

6.3 Replacing the battery of the conductivity measuring cell



1. Remove the lid of the conductivity measuring cell.
2. Remove the circuit board.
3. Remove the used battery.
4. Insert a new battery.
5. Close the lid of the conductivity measuring cell.
6. Press the button of the conductivity measuring cell.

» The measuring cell is operational.

7 Cleaning, inspection, maintenance

Inspection and maintenance of a treatment group is stipulated in DIN Standard EN 806-5. Regular maintenance ensures trouble-free and hygienic operation. Have the treatment group maintained by a qualified specialist at least once a year. Proper operation and maintenance of the product are essential for trouble-free and hygienic operation.

A maintenance contract ensures that all the required maintenance work will be performed in due time.

► Only use genuine spare and wearing parts from Grünbeck.

7.1 Cleaning

1. Only clean the outside of the product.
2. Do not use any strong or abrasive cleaning agents because they may damage the surface.
3. Wipe the product with a damp cloth.

7.2 Inspection

Regular inspection increases the operational reliability of your product.

To conduct an inspection, proceed as follows:

1. Visually check for leaks.
2. Check the function of the conductivity measuring cell (refer to chapter 6.1).

7.3 Maintenance

In order to carry out maintenance, proceed as follows:

1. Visually check for leaks.
2. Check the function of the conductivity measuring cell (refer to chapter 6.1).
3. Check the connected full demineralisation unit and replace it, if necessary.

7.4 Consumables

Product	Order no.
Filling cartridge desaliQ:HB2	707 745
Battery CR2032	WZ9-790075e

7.5 Spare parts

You may order spare parts and consumables from your local Grünbeck representative (refer to the internet at www.gruenbeck.com).

7.6 Wearing parts

Wearing parts are listed below.

- Gaskets

8 Troubleshooting

Observation	Meaning	Remedy
LED of conductivity measuring cell does not flash.	The battery is exhausted.	Replace the battery (refer to 6.3).
	The conductivity measuring cell is defective.	Replace the conductivity measuring cell.
LED of conductivity measuring cell flashes red.	The filling cartridge is exhausted.	Replace the filling cartridge (refer to 6.2).

9 Disposal

► Comply with the applicable national regulations.

9.1 Packaging

► Dispose of the packaging in an environmentally sound manner.

9.2 Product

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

► Dispose of electrical and electronic products and components in an environmentally sound manner.

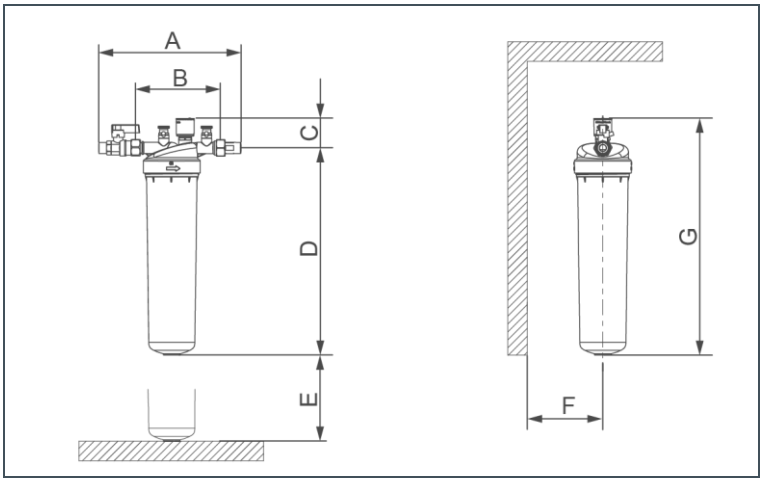
► If your product contains batteries or rechargeable batteries, dispose of them separately from your product.

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

Dismantling prior to disposal

► Remove the conductivity measuring cell from the brass body (fork spanner SW24 required).

10 Technical specifications



Dimensions and weights		
A Installation length with screw connection	mm	265
B Installation length without screw connection	mm	160
C Height above centre of pipe connection	mm	55
D Height below centre of pipe connection with cylinder	mm	380
E Clearance required to replace the filling cartridge	mm	100
F Min. distance to wall	mm	70
G Total height	mm	435
Operating weight	kg	2.6
Shipping weight, approx.	kg	3.0

Connection data		
Nominal connection diameter		DN 15 (½")

Performance data		
Max. operating pressure	bar	6
Filling capacity at 1.5 bar (without desaliQ:HB2)	m³/h	2.65

General data		
Water temperature	°C	5 – 30
Ambient temperature	°C]	5 – 40
Order no.		**707 755**

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