We understand water.

Heating water treatment | thermaliQ filling pump

Operation manual

grünbeck

General Contact
Germany

International Sales
✆ +49 9074 41-145

Service
✆ +49 9074 41-333
service@gruenbeck.de

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

Friday
7:00 am - 4:00 pm

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1 Introduction

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

► Carefully read this manual and the included manuals on the components before you operate your product.

► Obey all safety and handling instructions.

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

1.1 Validity of the manual

- thermaliQ filling pump

1.2 Other applicable documents

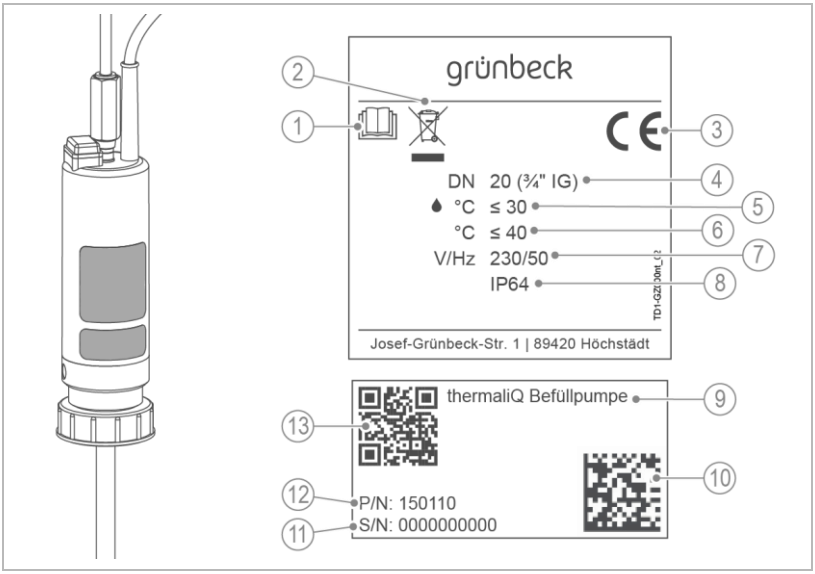
- Material safety data sheets
  - Dosing solution for heating protection thermaliQ safe
  - Cleaning agent for heating systems thermaliQ

1.3 Product identification

You can identify your product based on the product designation and the order no. indicated on the type plate.

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

The type plate is located on the thermaliQ filling pump.



	Designation
1	Obey the operation manual
2	Disposal information
3	CE mark
4	Connection
5	Operating temperature
6	Ambient temperature
7	Power supply

	Designation
8	Protection
9	Product designation
10	Data matrix code
11	Serial no.
12	Order no.
13	QR code

1.4 Symbols used

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

1.5 Depiction of warnings

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

SIGNAL WORD Type and source of hazard

- Possible consequences

► Preventive measures

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

Warning symbol and signal word		Consequences if the information/ instructions are ignored	
	**DANGER**	Personal injury	Death or serious injuries
	**WARNING**		Possible death or serious injuries
	**CAUTION**		Possible moderate or minor injuries
	NOTE	Damage to property	Possible damage to components, the product and/or its functions, or an object in its vicinity

1.6 Demands on personnel

During the individual life cycle phases of the product, different people carry out work on the product. This work requires different qualifications.

1.6.1 Qualification of personnel

Personnel	Requirements
Operator/user	• No special expertise required • Knowledge of the tasks assigned • Knowledge of possible dangers in case of incorrect behaviour • Knowledge of the required protective equipment and protective measures • Knowledge of residual risks
Owner/operating company	• Product-specific expertise • Knowledge of statutory regulations on work safety and accident prevention

Personnel	Requirements
Qualified specialist • Electrical engineering • Sanitary engineering (HVAC and plumbing) • Transport	• Professional training • Knowledge of relevant standards and regulations • Knowledge of detection and prevention of potential hazards • Knowledge of statutory regulations on accident prevention
Technical service (Grünbeck's technical service/authorised service company)	• Extended product-specific expertise • Trained by Grünbeck

1.6.2 Authorisations of personnel

The table below describes which tasks may be carried out by whom.

	Operator/user	Owner/operating company	Qualified specialist	Technical service
Transport and storage		X	X	X
Installation and mounting			X	X
Start-up/Commissioning			X	X
Operation and handling	X	X	X	X
Cleaning	X	X	X	X
Inspection	X	X	X	X
Maintenance			X	X
Troubleshooting			X	X
Repair				X
Decommissioning and restart/recommissioning		X	X	X
Dismantling and disposal		X	X	X

1.6.3 Personal protective equipment

► As an owner/operating company, make sure that the required personal protective equipment is available.

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

Protective gloves

Protective goggles

2 Safety

2.1 Safety measures

- Only operate your product if all components are installed properly.
- Obey the local regulations on drinking water protection, accident prevention and occupational safety.
- Do not make any changes, alterations or extensions on your product.
- Only use genuine spare parts for maintenance or repair.
- Risk of slipping due to escaping water.
- Risk of tripping due to delivery hose and mains cable on the floor. Lay the delivery hose and the mains cable away from traffic routes.
- Keep the premises locked against unauthorised access to protect imperilled or untrained persons from residual risks.
- Make sure that the product with the canister is set up in a way that it cannot tip over and that the stability of the product with the canister is guaranteed at all times.

2.1.1 Pressure-related hazards

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

2.1.2 Electrical hazards

- There is an immediate danger of fatal injury from electric shock when touching live parts. Damage to the insulation or individual components can be life-threatening.
- Only have qualified electricians carry out electrical work on the product.
- In case of damage to live components, switch off the voltage supply immediately and arrange for repair.
- Keep moisture away from live parts. Moisture can cause short-circuits.

2.1.3 Persons in need of protection

- This product is not designed to be used by persons (including children) with reduced capabilities, lack of experience or lack of knowledge.
- Cleaning and maintenance must not be carried out by children.
- Children must not play with the product.

3 Product description

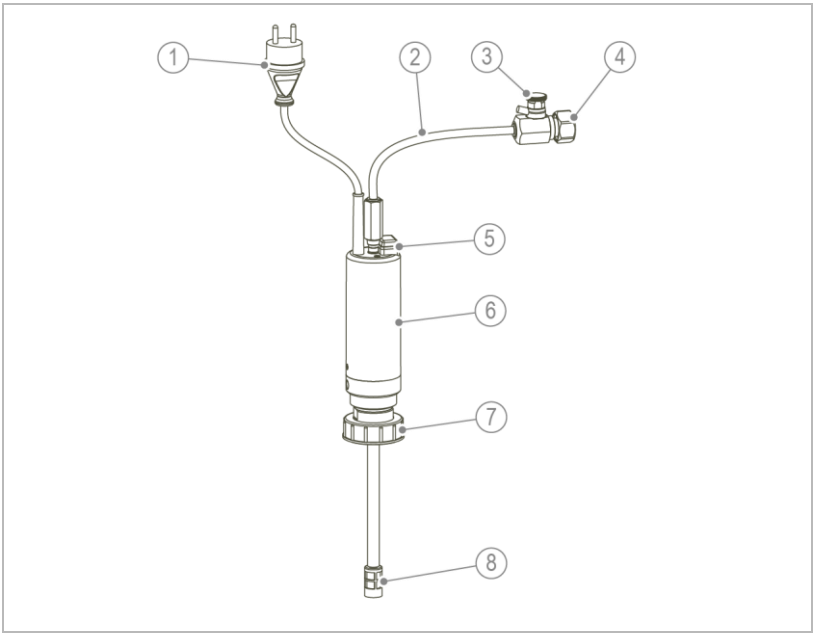
3.1 Intended use

- The thermaliQ filling pump is designed exclusively for use in industrial and commercial applications.
- The thermaliQ filling pump is designed to inject the dosing solution for heating protection thermaliQ safe and cleaning agent for heating systems thermaliQ clean into a heating circuit.

3.1.1 Foreseeable misuse

- The thermaliQ filling pump is **not** to be used to deliver combustible and acid liquids.

3.2 Product components



	Designation	Function
1	Mains plug	with mains cable for 130 V Schuko socket
2	Delivery hose	For dosing solution
3	Vent valve	for suction process and pressure relief
4	KFE boiler fill and drain fitting	with non-return valve and flat seal
5	Switch	To switch the filling pump on an off
6	Filling pump	
7	Closing cap	in size no. 51 for 5 l and 10 l canisters
8	PVC suction hose	with dirt strainer

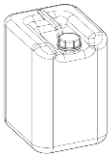
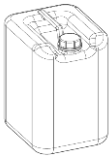
3.3 Functional description

The thermaliQ filling pump can directly be screwed onto the canisters containing 5 or 10 litres. The connection to the heating system is made by means of a KFE boiler fill and drain fitting.

After plugging in the mains plug, the filling pump is ready for operation. The filling pump is switched on and off by means of a switch at the pump's top surface.

3.4 Accessories

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

Illustration	Product		Order no.
	**thermaliQ safe** **Dosing solution for heating protection**	**1 l**	**170 076**
		5 l	**170 077**
		10 l	**170 078**
	**thermaliQ clean** **Cleaning agent for heating systems**	**1 l**	**170 057**
		5 l	**170 058**
		10 l	**170 059**
	thermaliQ safe test kit		**170 504**
	To determin the concentration of the inhibitor		

4 Transport and storage

4.1 Transport

- ► Transport the product in the transport case only.
- ► Keep all the components inside the transport case when they are not in use.

4.2 Storage

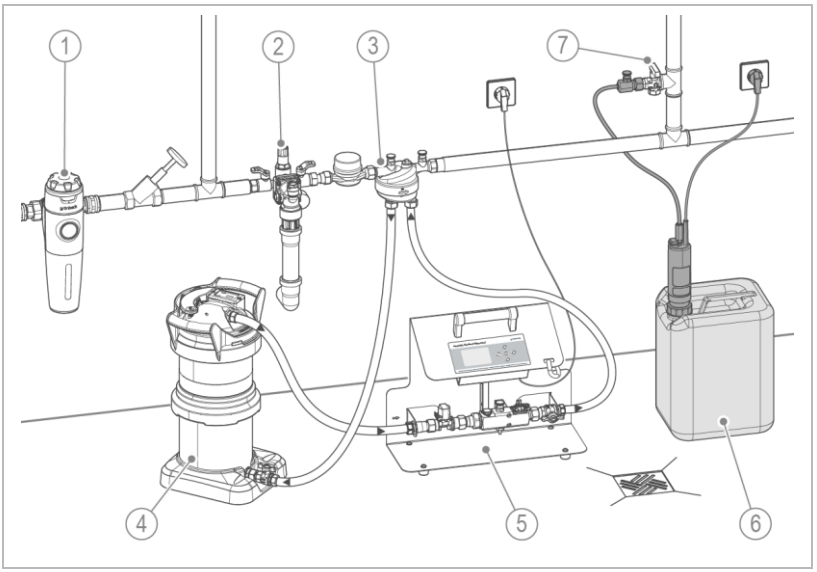
► Protect the product from the impacts below when storing it:

- Dampness, moisture
- Environmental impacts such as wind, rain, snow, etc.
- Frost, direct sunlight, severe heat exposure
- Chemicals, dyes, solvents and their vapours

5 Installation

The installation of the product must be carried out by a qualified specialist only.

Installation example



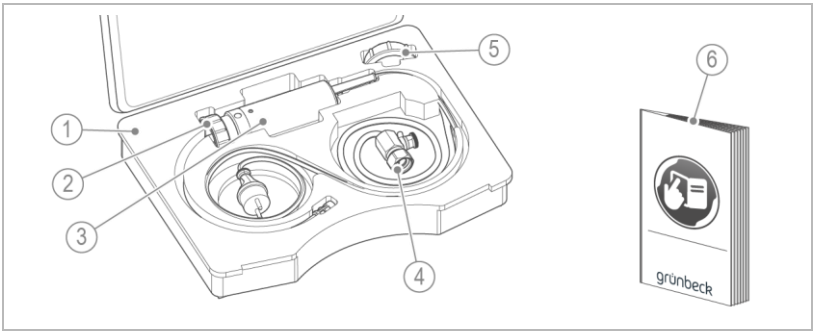
	Designation
1	Drinking water filter, e.g. pureliQ
2	Euro system separator according to DIN EN 1717 or filling section thermaliQ:FB13i
3	Filling adapter
4	Mixed bed cartridge desaliQ:MB9

	Designation
5	desaliQ basic filling module
6	thermaliQ safe or thermaliQ clean
7	KFEboiler fill and drain shut-off valve

5.1 Requirements for the installation site

- The installation site must be frost-proof and ensure the system's protection from direct sunlight, chemicals, dyes, solvents and their vapours, etc.
- The installation site must have a floor drain.
- For the electrical connection, a Schuko socket is required.

5.2 Checking the scope of supply



	Designation
1	Transport case
2	Closing cap no. 51
3	Filling pump with PVC suction hose and dirt strainer

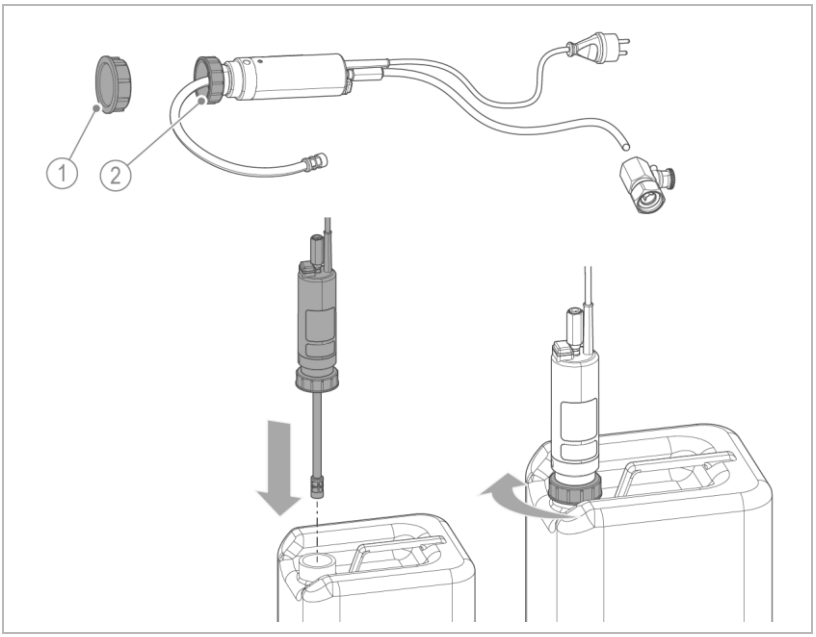
	Designation
4	KFE boiler fill and drain fitting with delivery hose
5	Closing lid no. 61
6	Operation manual

► Check the scope of supply for completeness and damage.

5.3 Water installation

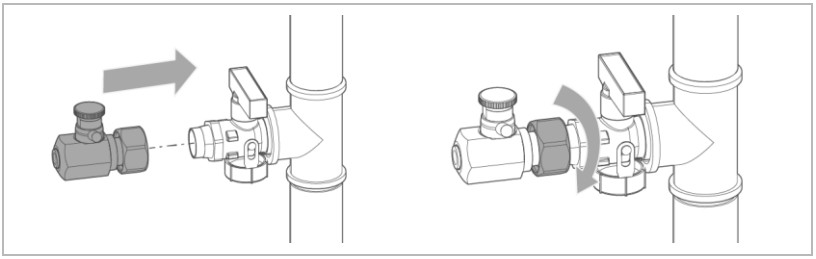
Depending on the canister size of 5 l, 10 l or 20 l, two different closing caps are used.

► Change the closing cap on the filling pump, if required.

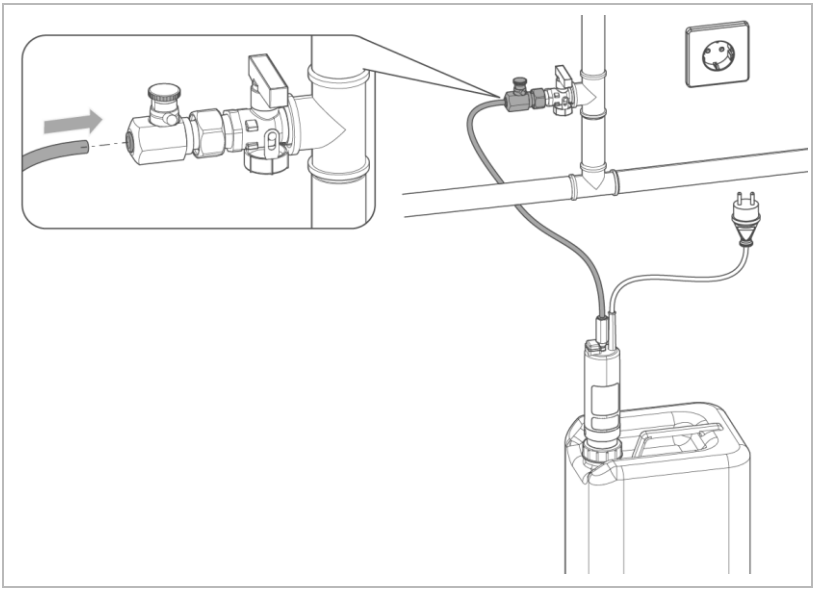


	Designation		Designation
1	Closing cap no. 61 (for 20 l canisters)	2	Closing cap no. 51 (for 5 l and 10 l canisters)

1. Open the canister.
2. Insert the suction hose with dirt strainer into the opening of the canister.
3. Screw the closing cap of the filling pump onto the canister.



4. Connect the KFE boiler fill and drain fitting to the KFE boiler fill and drain shut-off valve of the heating system.



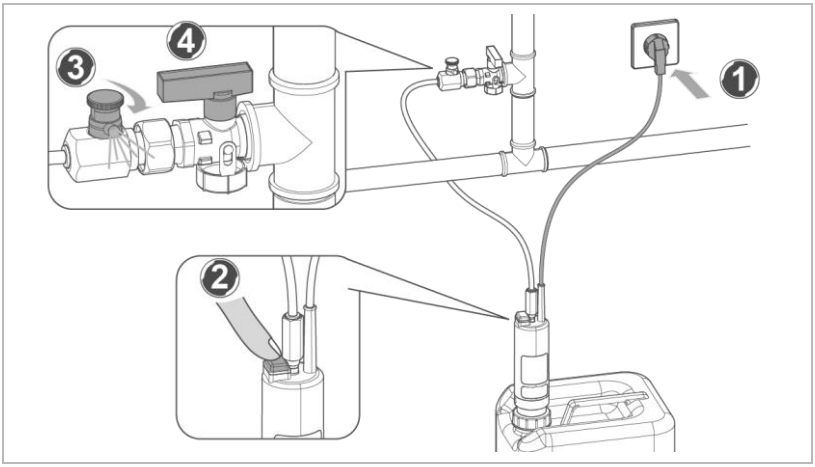
5. Connect the delivery hose to the coupling of the KFE boiler fill and drain fitting – firmly insert it.

► Check that all connections are firmly connected.

6 Start-up/Commissioning

The loud noise during the initial start-up respectively after replacing the canister only continues until the pump system has filled up with liquid.

The vent valve must be open during the suction process. If the vent valve is closed, the filling pump cannot draw any liquid.



1. Plug the mains plug into a socket.
2. Switch on the thermaliQ filling pump by means of the switch while the KFE boiler fill and drain shut-off valve is closed.
3. Open the vent valve on the KFE boiler fill and drain fitting.

» The delivery hose is deaerated.

   a Close the vent valve after the venting process has been fully completed.

4. Open the KFE boiler fill and drain shut-off valve.

7 Operation/handling

Be aware that the filling pump heats up in continuous operation.

- ► Switch off the filling pump by means of the switch after use.
- ► Flush the filling pump with clear water after operation and when using different cleaning agents for heating systems.

You can check the concentration of the inhibitor thermaliQ safe with thermaliQ safe test kit (refer to chapter 3.4).

7.1 Replacing the canister

Prevent the filling pump from running dry.

- ► Check the filling level of the canister at regular intervals.
- ► Replace the canister as follows:

1. Disconnect the product from the power supply – pull the mains plug.
2. Close the KFE boiler fill and drain shut-off valve.
3. Remove the closing cap from the canister and pull the filling pump from the canister.
4. Open the new canister and insert the filling pump into the canister.
5. Put the filling pump into operation (refer to chapter 6).

8 Maintenance and repair

Maintenance and repair includes cleaning, inspection and maintenance of the product.

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

By concluding a maintenance contract you make sure that all maintenance work will be carried out on time.

► Only use genuine spare and wearing parts from Grünbeck.

8.1 Cleaning

NOTE

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

- These substances damage the plastic components.

► Use a mild/pH-neutral soap solution.

► Only clean the outside of the product.

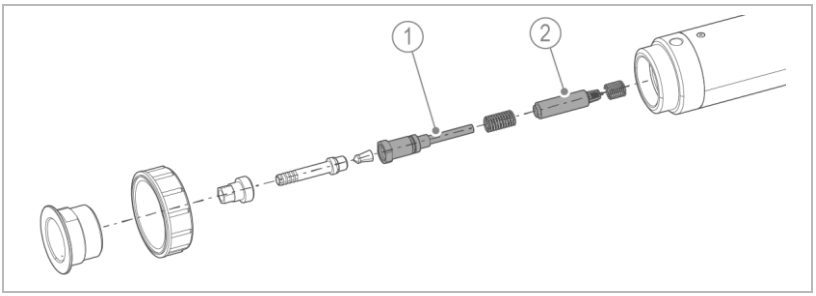
► Do not use any strong or abrasive cleaning agents.

► Wipe the surfaces with a damp cloth.

► Flush the filling pump with clear water after use.

Cleaning the interior parts

Cleaning the interior parts is only required in case of failure (refer to chapter 9).



	Designation		Designation
1	Guide tube	2	Piston

1. Remove the individual components.
2. Clean the guide tube and the piston by moving it back and forth and by flushing them.
3. Flush or blow through the valve in the piston
4. Remount the components.
5. Check the filling pump for function.

8.2 Intervals

By way of regular inspections and maintenance, malfunctions can be detected in time and product failures might be prevented.

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

Task	Interval	Task
Inspection	6 months	• Check for function and leaks • Check the mains cable and mains plug
Maintenance	12 months	• Visual inspection for damage and corrosion • Check the vent valve • Check the delivery hose • Check the suction line with dirt filter
Repair	5 years	• Recommendation: Replace wearing parts

8.3 Inspection

You as owner/operating company can carry out the regular inspections yourself.

► Carry out an inspection at least every 6 months.

1. Check all water-carrying parts for leaks.
2. Check the filling pump for function.
3. Check the mains cable and mains plug for damage.

8.4 Maintenance

Regular work is required in order to ensure the proper functioning of the product in the long term.

WARNING Hazardous voltage

- Severe burns, cardiovascular failure, fatal electric shock.

► Disconnect the product from the power supply before working on electrical components.

► In addition to the inspection, carry out the activities below every 12 months:

4. Check the switch for damage.
5. Check whether the vent valve on the KFE boiler fill and drain fitting can be operated easily.
6. Check the delivery hose for damage.
7. Check the suction line and the dirt filter for damage.
8. Clean the interior parts, if necessary (refer to chapter 8.1).

► Replace damaged components.

8.5 Spare parts

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

8.6 Wearing parts

Wearing parts are listed below:

- Seals
- Guide tube
- Piston

9 Troubleshooting

Observation	Explanation	Remedy
The filling pump does not start during start-up/commissioning.	The vent valve is closed	► Open the vent valve on the KFE boiler fill and drain fitting
The filling pump is not running	After a prolonged period of dry storage, the piston is stuck in the guide tube	► Remove the interior parts and clean them
	Pump system dirty	► Completely flush the filling pump

If a malfunction cannot be eliminated, the technical service personnel can take further measures.

► Contact technical service (refer to inner cover sheet for contact data).

10 Decommissioning

Between uses, the thermaliQ filling pump must be taken out of operation and stored temporarily.

► Proceed as follows to put the filling pump out of operation:

1. Switch off the filling pump and disconnect the product from the power supply.
2. Close the KFE boiler fill and drain shut-off valve.
3. Open the vent valve.

» Pressure is relieved.

4. Remove the KFE boiler fill and drain fitting.
5. Loosen the closing cap on the canister and remove the filling pump from the canister.
6. Flush the product with clear water.
7. Clean the outside of the product.
8. Store and transport the product in the transport case (refer to chapter 4).

10.1 Restart

► Put the product into operation again (refer to chapter 5).

11 Disposal

► Obey the applicable national regulations.

Packaging

► Dispose of the packaging in an environmentally sound manner.

Canister with dosing solution

► Obey the safety data sheet of the dosing solution used.

► Flush the canister with a large amount of water and discharge the flushing water to the drain.

Product

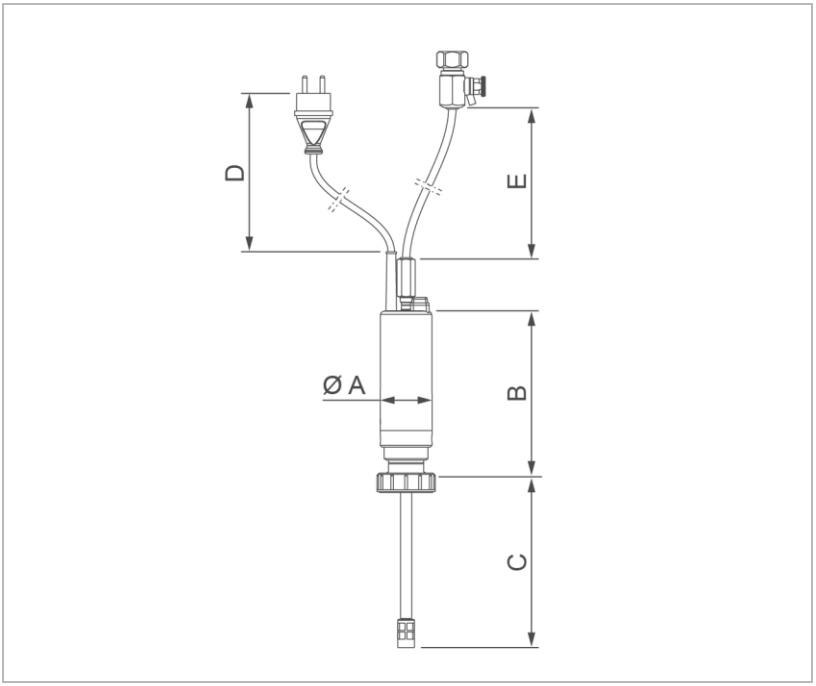
If this symbol (crossed-out wheelie bin) is on the product, it means that this product or its electrical and electronic components must not be disposed of as household waste.

► Find out about the local regulations on the separate collection of electrical and electronic products.

► Make use of the collection points available to you for the disposal of your product.

For information on collection points for your product contact your municipality, the public waste management authority, an authorised body for the disposal of electrical and electronic products or your waste disposal service.

12 Technical specifications



Dimensions and weights			
A	Diameter of filling pump	mm	56
B	Height of filling pump	mm	190
C	Length of suction hose	mm	400
D	Length of mains cable	mm	2000
E	Length of delivery hose	mm	2000
Operating weight		kg	~ 1.5
Shipping weight		kg	~ 3.5

Connection data		
Connection		DN 20 (¾" m. thread)
Hose connection	mm	6
Power supply	V/Hz	230/50
Protection		IP64

Performance data		
Delivery rate	l/h	≤ 100
Suction head	m	≤ 5.4
Dynamic pressure	bar	8.8

General data		
Operating temperature	°C	≤ 30
Ambient temperature	°C	≤ 40
Order no.		**150 110**

13 Operation log

► Document the initial start-up/commissioning and all maintenance activities.

thermaliQ filling pump for heating water treatment

Serial no.: _____

13.1 Start-up/Commissioning log

Customer	
Name	
Address	

Installation/Accessories	

Remarks

Start-up/Commissioning	
Installer/Owner/Operating company:	
Company	
Work time certificate (no.)	
Date/signature	

13.2 Maintenance

Work performed		
☐ Inspection	☐ Maintenance	☐ Repair

Description

Execution confirmed	
Company:	
Name:	
Date:	Signature:

Work performed		
☐ Inspection	☐ Maintenance	☐ Repair

Description

Execution confirmed	
Company	
Name	
Date	Signature

EU Declaration of Conformity

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

CE

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

This certificate becomes void if the system is modified in any way not approved by us.

Heating water treatment
thermaliQ filling pump

Serial no.: Refer to type plate

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

- EMC (2014/30/EU)

The following harmonised standards have been applied:

- DIN EN 61000-3-2:2015-03
- DIN EN 55014-1:2012-05
- DIN EN 61000-3-3:2014-03
- DIN EN 55014-2:2016-01

Responsible for documentation: Dipl.-Ing. (FH) Markus Pöpperl

Manufacturer

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoechstaedt/Germany

Hoechstaedt, Jul 2018

i. V. Dipl.-Ing. (FH) Markus Pöpperl
Head of Technical Product Design

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoechstaedt/Germany

+49 9074 41-0

+49 9074 41-100

info@gruenbeck.com
www.gruenbeck.com

For more information go to
www.gruenbeck.com