

The HEH 9 water softener needs to be checked for tightness after installation and after each maintenance. In order to do so, apply the highest operating pressure that might occur and check the HEH 9 water softener visually for tightness.

Prior to each filling resp. refilling of the heating system, the water meter reading and consequently the soft water capacity needs to be checked and the exchanger resin must be replaced, if necessary.

The water volume that has passed through and the raw water hardness must be documented in table 1.

The max. soft water volume that can be achieved subject to the raw water hardness is indicated in fig. 6.

In case the soft water is blended to a desired residual hardness, the soft water volume achieved (blending water) will increase accordingly.

Raw water hardness 20 °dH (35.6 °f)

→ 900 litres with 0 °dH (0 °f).

Raw water hardness 20 °dH (35

water hardness of 10 °dH (17.8 °f)

→ 1800 litres with 10 °dH (17.8 °f)

Water hardness		°dH	°f	mmol/l = mol/m³
German degrees	1 °dH	△	1,78	0,178
French degrees	1 °f	△	0,56	1
Alkaline earth ions	1 mmol/l = mol /m³	△	5,6	10

The graph illustrates the relationship between soft water capacity and raw water hardness. The x-axis represents the achievable soft water volume in liters (l), ranging from 0 to 1800. The left y-axis represents raw water hardness in degrees dH (°dH), ranging from 0 to 35. The right y-axis represents raw water hardness in degrees f (°f), ranging from 0.0 to 70.0. Two curves are plotted: an upper curve labeled '°dH' and a lower curve labeled '°f'. Both curves show that as the soft water volume increases, the raw water hardness decreases.

Achievable soft water volume [l]	Raw water hardness [°dH]	Raw water hardness [°f]
500	35	70
600	30	60
800	20	40
1000	15	30
1200	12	24
1400	10	20
1600	8	16
1800	7	14

Fig. 6: Achievable soft water volume (0 °dH, 0 °f)

If several filling procedures are done with one HEH 9 water softener, the soft water needs to be checked (water test kit) subject to the raw water hardness during the filling process and the results must be documented (refer to table 1).

[illegible]

11 | How to re- place the ex- changer resin

If the exchanger resin of the HEH 9 water softener is exhausted, it must be replaced. Depressurise the HEH 9 water softener (close inlet and outlet - open sampling valve). Unscrew the union nuts at the distributor valve and dismount the entire distributor valve from the exchanger tank. Remove the riser pipe from the exchanger tank and completely drain the exchanger tank. Wash out any residues with water.



Note: The exchanger resin may be discharged together with the domestic waste (waste code number 57125).

Insert the riser pipe into the exchanger tank again. Close the riser pipe (by means of a plug or adhesive tape). Fill in the new exchanger resin into the exchanger tank. Centre the riser pipe - remove resin sticking to the thread and riser pipe - and remove the plug from the riser pipe. Remount the distributor valve. Remount the connection hoses. Deaerate the HEH 9 water softener. Document the water meter reading and the raw water hardness.

12 | Inspection

The inspection only comprises a functional check (check of soft water hardness at sampling valve) and its documentation.

13 | Consumables

Consumables and spare parts can be purchased from the sanitary trade or from your local Grünbeck technical service.

Water test kit "Total hardness" °dH

Order no. 170 145 (1 piece)

Order no. 170 100 (10 piece)

Water test kit "Total hardness" of

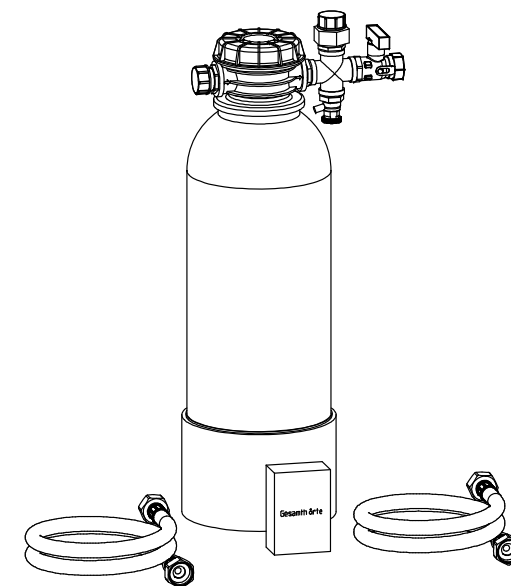
Order no. 170 182 (1 piece)

Refill pack of exchanger resin (4 litres)

Order no. 190 575

Operation Manual

HEH 9 Water Softener



Edition February 2014
Order no. 106 190 957-inter

Grünbeck Wasseraufbereitung GmbH
Josef-Grünbeck-Strasse 1
89420 Hoechstädt/Danube · GERMANY
Phone +49 9074 41-0 · Fax +49 9074 41-100
www.gruenbeck.com · info@gruenbeck.com



A company certified by TÜV SÜD
in accordance with DIN EN ISO 9001, DIN
EN ISO 14001, DIN EN ISO 13485 and SCC

1 | General notes

The HEH 9 water softener must be installed by an authorised specialist of the sanitary and heating trade.

Check the HEH 9 water softener for transport damage.

The HEH 9 water softener must be protected from frost and may not be installed next to heat sources which radiate a lot of heat.



Attention! After completion of the heating make-up feed, the shut-off valves upstream and downstream of the HEH 9 water softener need to be closed and the HEH 9 water softener must be depressurised by means of the sampling valve.



Warning! The installation room must have a floor drain. If no floor drain is available, a corresponding water stop device must be available.

2 | Components of the HEH 9 water softener

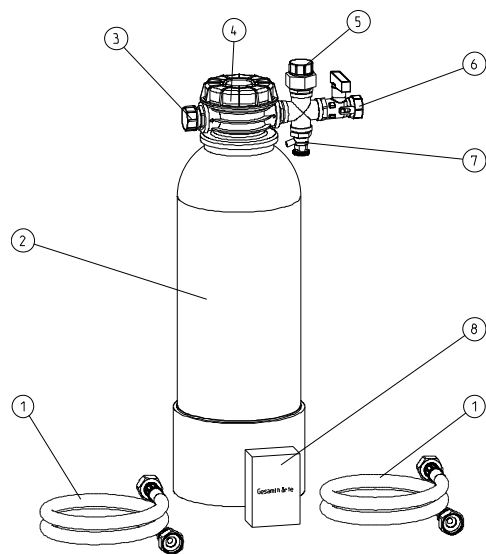


Fig. 1: Exploded drawing of HEH 9 water softener

- | | |
|---------------------|-----------------------------------|
| ① Connection hoses | ⑤ Soft water outlet |
| ② Exchanger tank | ⑥ Dosing point (male thread 1/2") |
| ③ Raw water inlet | ⑦ Sampling valve |
| ④ Distributor valve | ⑧ Water test kit "Total hardness" |

3 | Designated application

The HEH 9 water softener is designed for the filling/refilling of heating circuits. It must not be incorporated into the heating circuit.

4 | Scope of supply

- Exchanger tank incl. distributor valve
- 2 Connection hoses (length = 1.5 m)
- Water test kit "Total hardness"
- Operation manual

5 | Technical specifications

Water softener	HEH 9
Nominal connection diameter	3/4" (female thread)
Nominal diameter [DN]	12
Nominal flow [m³/h]	0.3
Resin volume [l]	4
Nominal capacity [m³ x °dH]	18
	32
Max. admissible operating pressure [bar]	8
Max. water temperature [°C]	45
Total height approx. [mm]	580
Empty weight [kg]	8
Order no.	190 570

6 | Installation requirements

Please observe local installation directives, general guidelines and technical specifications.

The installation site must ensure the protection of the HEH 9 water softener from chemicals, dyes, solvents, vapours and direct sunlight.

A shut-off valve must be installed upstream and downstream of the HEH 9 water softener in order to shut it off.

In order to monitor the soft water capacity, a water meter with roller-type counter needs to be installed downstream of the HEH 9 water softener (refer to accessories).

For pressure control, we recommend installing a corresponding pressure gauge in close proximity, so that the admissible pressure for the heating system will not be exceeded during filling/refilling process.

7 | Accessories

The GENO-therm® filling device Basic consists of:

Insulated housing, system separator BA, two shut-off valves, pressure reducer unit incl. pressure gauge, water meter and connections for all full demineralisation or softening products of the heating protection series.

Order no. 707 120

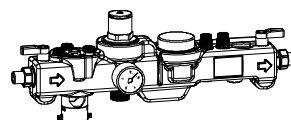


Fig. 2: GENO-therm® filling device Basic

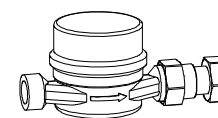


Fig. 3: Water meter

Water meter with connection material with roller-type counter to monitor the make-up water feed volume, for installation at the HEH 9 water softener.

Order no. 702 845

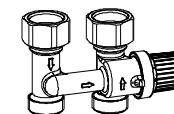


Fig. 4: Blending housing

Blending housing to set the desired water hardness.

Order no. 707 056

8 | Installation

The HEH 9 water softener has to be installed in the cold water pipe, directly upstream of the filling tap.



Note: Only connect the soft water hose after completion of the deaeration (refer to paragraph 7).

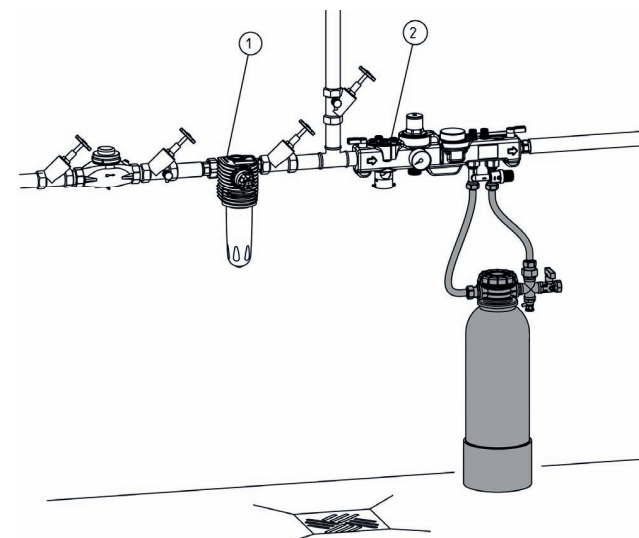


Fig 5: Flow chart: filling of heating systems with HEH 9 water softener

- ① Drinking water filter (e. g. BOXER® KD)
- ② GENO-therm® filling device Basic (accessory)

9 | Start-up

After installation of the HEH 9 water softener, deaerate the HEH 9 by opening the shut-off valve (inlet). Keep the sampling valve open until water flows from the connection hose (soft water outlet).