magnetic Demineralization
Refill station (NF plus)
Instructions for use

magnetic ...einfach besser

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The function

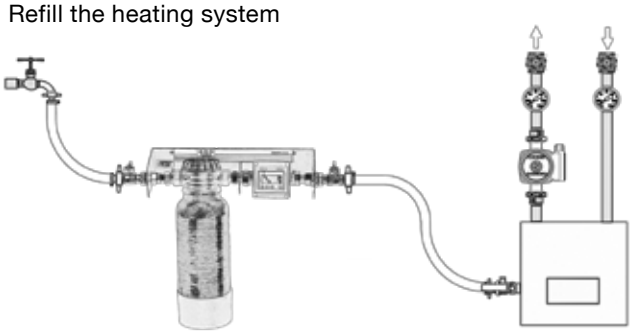
The **magnetic® NF plus** removes limescale and aggressive water constituents, like sulphates, nitrates and chlorides, from the filling water. The device works on the basis of a mixed-bed-resin ion exchanger and delivers demineralised water quality for every heating system size. This method does not add any chemicals to the water. The device works without external electricity connection.

Use with heating system filling hose

The **magnetic® NF plus** device must be pre-flushed with fresh drinking water if it is occasionally used for topping-up the heating system with a hose in order to get rid of the first amount of water flow through the device. That is done by checking the demineralisation with the integrated measuring computer. The filling hose must be vented before the subsequent filling process, i.e. filled with water to prevent any air from the filling tap getting into the heating system.

1. Flushing the tank

2. Refill the heating system



3. Close tap/valves, remove hoses

Safety note

The **magnetic® NF plus** should be flushed with about 10 litres of water before each use to get rid of the first amount of water flow through the device. A permanent connection with a heating system filling hose is not permitted. Unsupervised use is not permitted.

The fresh water tap, the shut-off valves on the **magnetic® NF plus** and the boiler shut-off valve must always be closed and the filling hose must always be removed after each use.

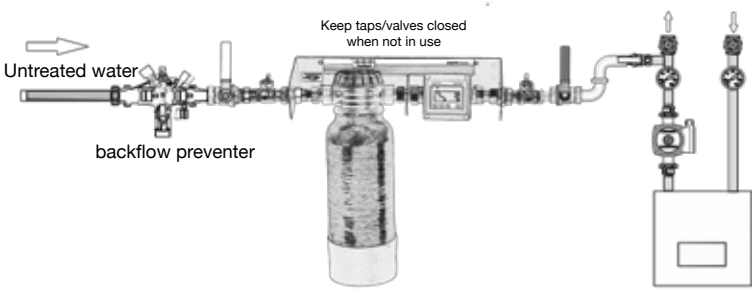
The mixed bed resin in the container must not get into the heating system. A fine-meshed strainer is integrated into the outlet for safety reasons – it must not be removed.

Permanent connection

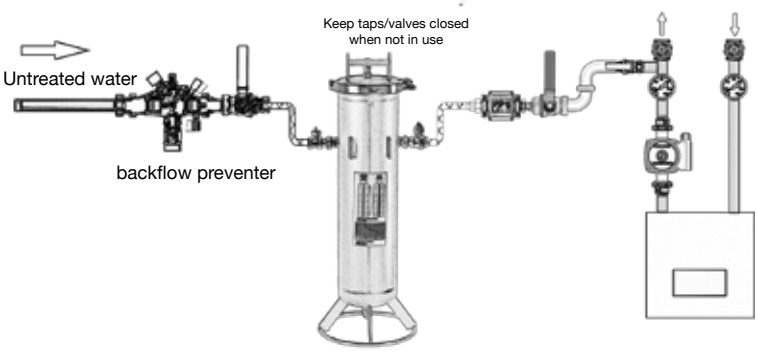
The **magnetic® NF plus** is pressure-tested up to 6 bar and is therefore also suitable for a permanent connection between the untreated water supply and the heating system.

A permanent connection can be subject to technical requirements depending on national or local regulations and such requirements must be complied with. A system isolator must be additionally installed in front of the filling station if the place of installation is subject to DIN EN 1717 (Germany).

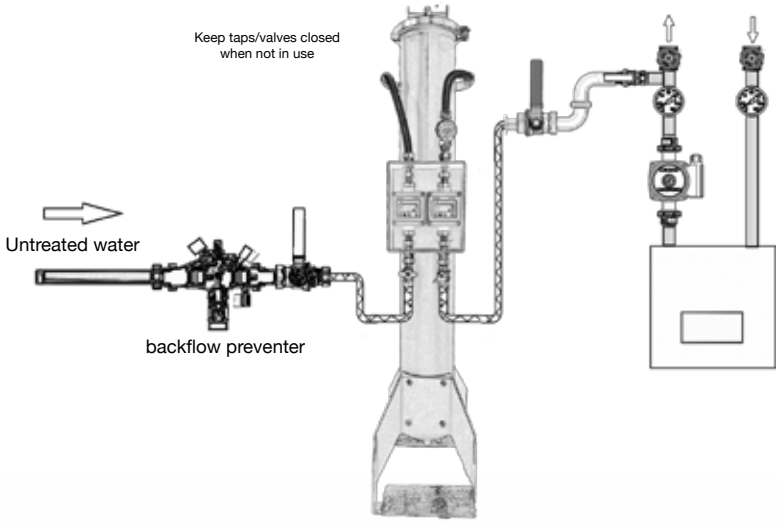
NF 2 plus, 6 plus



NF 12 plus



NF 25 plus



Safety notes

The regulations of the water supply utility must be observed for a permanent connection to the drinking water network (e.g. system isolator as per DIN EN 1717).

The taps/valves on the heating system and drinking water network must be closed after use.

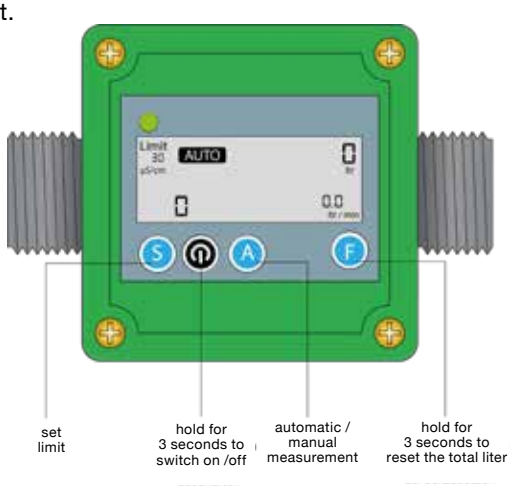
Safety notes

In the case of magnetic refilling stations, the additional use of an automatic refilling fitting with solenoid valve can result in damage and thus leakage of the magnetic refilling station. If the solenoid valve closes abruptly and automatically, pressure surges of well over 6 bar can occur for a short time.

In such cases, we therefore recommend the additional installation of a water hammer damper (e.g. from Caleffi). This should be installed between the solenoid valve and the magnetic refilling station.

Operating the measuring computer

The combined meter is battery-powered. It measures the flow rate in l/min, the total flow in litres and the content of dissolved minerals, either in µS/cm (microsiemens/cm) or TDS. It is also possible to set a limit for the maximum still tolerated mineral content in the demineralised water (outlet of the filling station). The limit value and the total quantity value can be reset.



Switching the conductivity value to TDS / Manual measurement of the conductivity

The factory setting of the measuring computer is electrical conductivity displayed in “µs/cm”. To switch the measurement to TDS in „ppm“, briefly press the power button. The measuring computer now shows „ppm“ (instead of „µS/cm“).

Press the “A” key to display the current conductivity value (µs/cm). The maximum settable conductivity value is 1999 µs/cm.

Automatic monitoring of the conductivity / Set limit

Press the “S” key to set the limit value for the conductivity in the display. The increase step is 15 µs/cm. A longer pressing of the “S” key resets the value back to zero.

Switch to automatic mode after you have set a limit value. Do that by pressing the “A” key to first do a manual test. Then press the “A” key again to switch to the automatic mode. “Auto” will then be shown in the display.

The conductivity will then be measured again every 20 litres. The LED on the left above the display blinks green for 30 seconds if the measured value is below the previously set limit value. The LED will start to blink red and an alarm tone will be emitted if the measured value exceeds the set limit value.

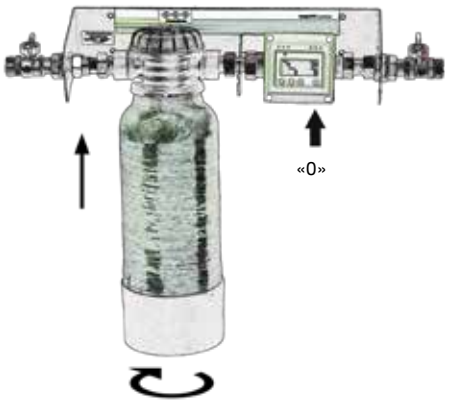
Switching between automatic and manual monitoring

Press the “A” key to switch from automatic to manual mode and thus reset the last measured value of the automatic monitoring.

Replacing the mixed bed resin: NF 2 plus, 6 plus

1. Close the ball valves, screw off the tank

2. Dispose of used resin with domestic waste, refill with new resin



3. Screw on the tank, reset measuring computer, see instructions for use

Replacing the mixed bed resin: NF 12 plus, 25 plus

1. Close all valves, remove safety strainer on the drain tap

2. Connect a hose to the drain tap, with the other hose end in the supplied water permeable collection bag

3. Connect the inlet to a drinking water tap with a hose

4. Open the inlet tap and the drain tap and flush out the resin until clear water comes out - the resin is then completly emptied.

5. Close the inlet tap and open the vent tap on the lid. Air can now get into the device and water in the filling station can flow out of the drain tap.

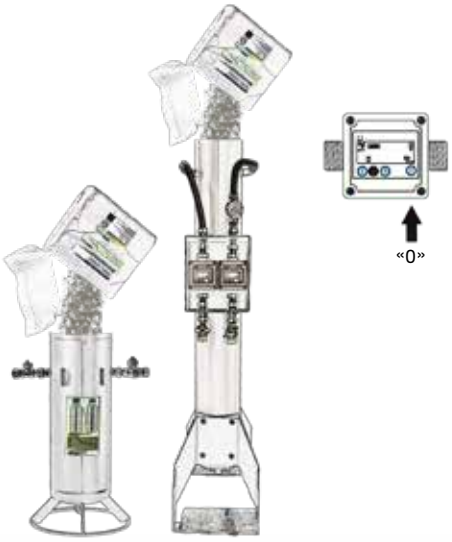
6. Used mixed bed resin can be disposed of with the normal household waste.

7. Close the drain tap, remove the hose and reinstall the safety strainer.

8. Refill with new resin.

9. Then vent the device again.

10. Put on the lid, connect the hoses and reset the measuring computer.



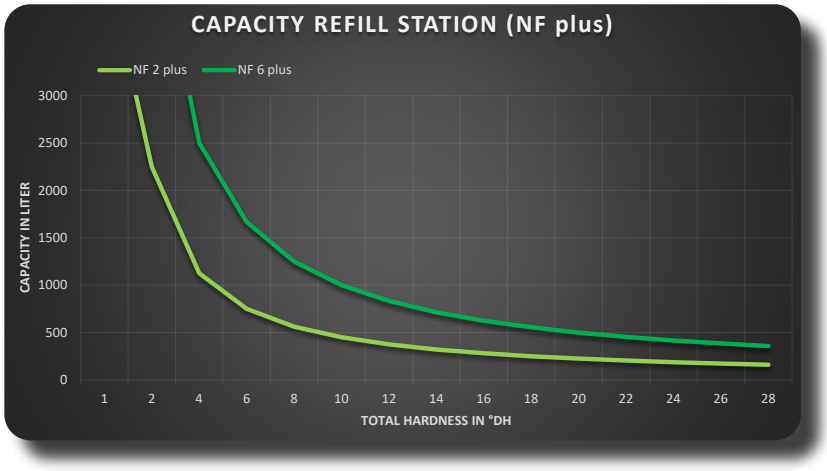
Capacity of the mixed bed resin

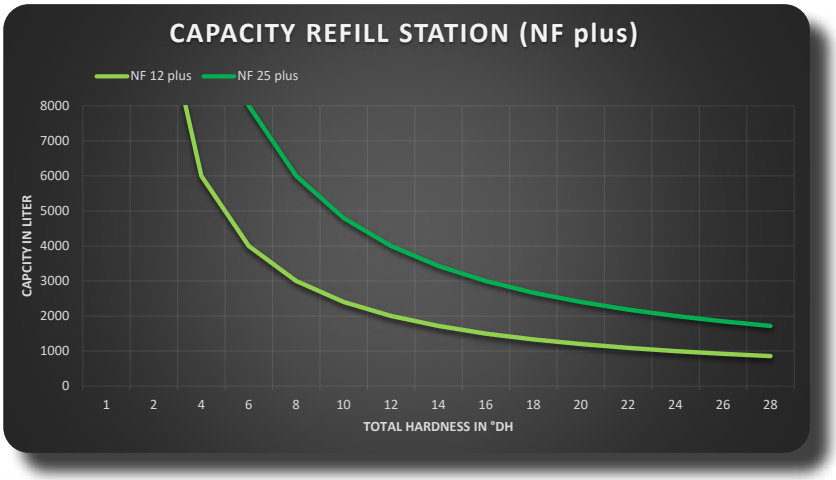
The capacity (range) of the mixed bed resin depends on the water hardness. It can be read from the diagram below or calculated with the capacity number of the amount of resin.

Refill station	Capacity figure at 1° dH
NF 2 plus	4500 liter
NF 6 plus	10000 liter
NF 12 plus	24000 liter
NF 25 plus	48000 liter

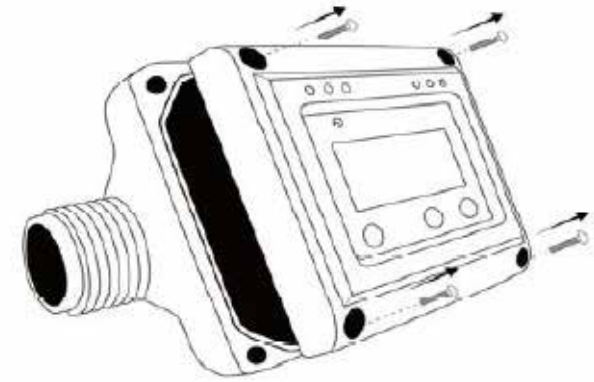
The capacity figure is used and divided by the raw water hardness in ° dH. The result is the capacity of the mixed bed resin in liter.

⚠ The conversion from µS/cm to water hardness gives only an approximate value and is only possible for untreated drinking water. Other water types contain not only limescale (calcium carbonate) but also other dissolved minerals. The capacity would then be less because the filling station removes all minerals.





Troubleshooting

Fault	Solution
No display or battery symbols appears	**Low battery power alert** The “battery” symbol on the display will blink when the batteries are drained. The last measured and displayed value and the settings will be stored and recovered when the battery replacement is completed. **Inserting/replacing the batteries** Remove the four front screws of the housing (see illustration below) and insert three batteries (AAA alkaline) into the battery holder. The front part of the housing can be turned by 90° or 180° if desired before fastening with the screws.  Video
The resin is exhausted quicker than calculated	**Loss of capacity** There is probably no fault. It could be that the untreated water contains not only limescale (calcium carbonate) but also other dissolved substances (sulphates, nitrates, chlorides) which are removed and thus reduce the capacity.

Technical Data

NF 2 plus, 6 plus

NF 12 plus

NF 25 plus

Description

magnetic® NF plus for the production of deionized heating system water in accordance with the latest directives/standards (VDI 2035 and SWKI BT 102-01), on the basis of ion exchange. Resin container made of stainless steel or polyglass bottle with floor stand or wall-mounting bracket. Head part with integrated shut-off valves and vent valve. Easy resin replacement by user possible. Integrated measuring counter for flow rate, total water flow quantity, water quality and limit value checking. Battery-powered with automatic switch-on function. Suitable for permanent connection if the specific requirements and planning directives (e.g. DIN EN 1717) are complied with.

Refill station	**NF 2 plus**	**NF 6 plus**	**NF 12 plus**	**NF 25 plus**
Annual consumption	< 250 l	< 500 l	< 2500 l	< 10000 l
Capacity at 1°dH	4.5 m^3	10 m^3	24 m^3	48 m^3
Fill rate	5 l/min	7 l/min	17 l/min	20 l/min
Operating pressure	< 6 bar	< 6 bar	<6 bar	< 6 bar
Max Temp.	60 °C	60 °C	60 °C	60 °C
Installation Length	490 mm	490 mm	370 mm	370 mm
Height	460 mm	560 mm	1022 cm	1490 mm
Empty weight	5 kg	5 kg	13 kg	23 kg
Resin filling	2.7 l	6.5 l	12.5 l	25 l

Maintenance

Installer:

Object:

Date of installation:

Serial number:

Date	Resin changed	Liter total	Signature

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