

# VM 98 Filling unit MEGAFILL



## Applications

VDI 2035 has been the standard for large heating installations for many years. Its latest version also applies to small systems  $\leq 50$  kW. This guideline is used as a reference for evaluation in case of damage.

MEGAFILL is a disposable cartridge for conditioning heating system water for first-time filling or refilling and fulfils parts 1+2 of the corresponding standard.

MEGAFILL desalinates ( $\text{GH} < 1$  °d) and alkalizes (pH 8.2– 9.5) the heating system water in one step. It also stabilises the pH value and removes the salts responsible for pitting corrosion.

## Installation

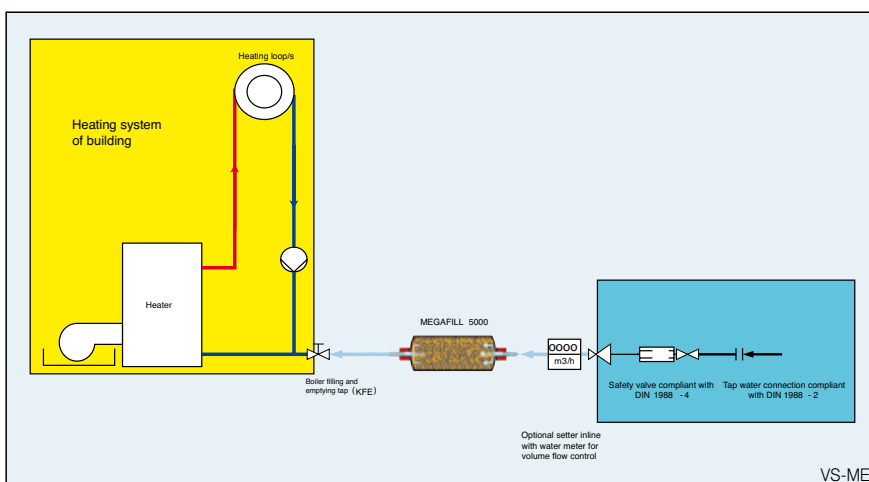
DIN standards require the connection of a system separator to the fresh water supply prior to filling. A water meter should then be connected to measure the filling quantity. To achieve the best results with MEGAFILL, flow throughput during filling should not exceed 10l/min. Flow throughput can be measured with a water meter or a TACONOVA setter available as an optional extra. Connect MEGAFILL to the heating system in the direction of flow (arrow) using two simple pieces of hose with 3/4" connections and fill the system. Be sure to observe the previously determined maximum capacity. Once the system is full, remove MEGAFILL and bleed the air from the system. Dispose of used filling units with the household rubbish.

## Advantages

- Prevents damage to hot water heating systems
- Filling pursuant to VDI 2035 Parts 1 and 2
- Warranty protection in case of damage
- Unique triple effect: Demineralisation and pH value stabilisation
- No corrosion, no scale formation
- Improved energy efficiency due to lack of lime precipitation
- Low cost
- Can also be retrofitted to prolong the life of heating systems
- Easy to install and operate

## Functionality

The unit consists of a mixed-bed cartridge with anion-cation exchange resins and a pH stabiliser that neutralise the salts and carbonates in tap water.



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## Technical data

Maximum operating temperature TB 30 °C  
Maximum operating pressure PB 6 bar  
Capacity approx. 5000 d/l  
Plastic housing  
Plastic connections  
Flow media: tap water  
Overall length: 577 mm  
Weight: 5.5 kg

## Note:

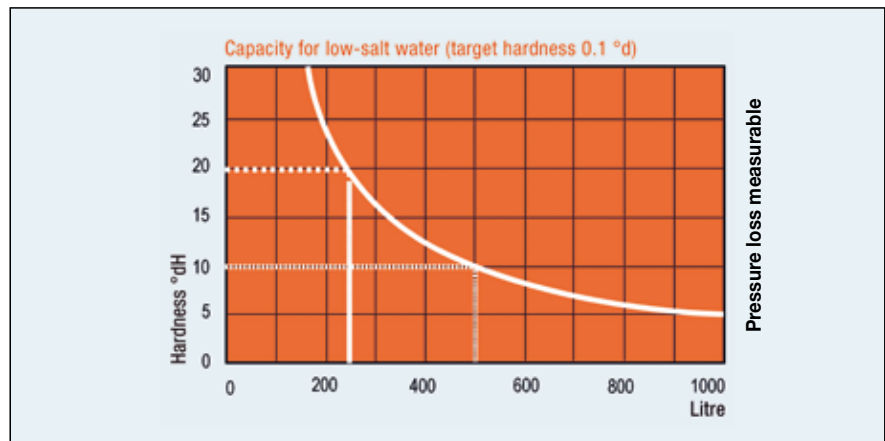
MEGAFILL 5000 ALU  
Art No.: 298.5041.000 should be used for heating systems containing aluminium components as the maximum pH value in this case should not exceed 8.5. According to VDI 2035 the target pH value for all other materials lies between 8.2 and 9.5; MEGAFILL 5000 Art-No.: 298.5042.000 should be used for these systems.

## Text for invitation of tenders

Disposable demineralisation unit for heating system filling water pursuant to VDI Guideline 2035. The system makes use of selected mixed-bed ion exchange resins and a pH stabiliser to demineralise and alkalis the water to provide a pH value between 8.2 and 9.5 (ALU version max. 8.5). The system also removes corrosive ions such as chloride and sulphate, thus providing permanent protection against corrosion.

## Type overview MEGAFILL filling units

Order No.	DN	G	pH range	
298.5041.000	20	3/4"	max. 8,5	for aluminium
298.5042.000	20	3/4"	8,2–9,5	



Maximum hardness of tap water used for filling			
Boiler output P in kW	SAV < 20 l/kW	20 l/kW < SAV < 50 l/kW	SAV > 50 l/kW
P ≤ 50	≤ 16,80 <small>Circulation heating systems</small>	≤ 11,2	< 0,1
50 < P ≤ 200	≤ 11,2	≤ 8,4	< 0,1
200 < P ≤ 600	≤ 8,4	< 0,1	< 0,1
P > 600	< 0,1	< 0,1	< 0,1

You will need to know the boiler output and the specific system volume (SSV) to determine the target hardness. The boiler output P is expressed in kW; the specific system volume is derived from the system's volume in litres divided by the boiler output in kW and is expressed as l/kW.

You can use the following diagram to determine the maximum permissible degree of hardness in °d for the water to be used to fill the heating system.

Target hardness 8.4 °d						
GH Vol.	5°d	10°d	15°d	20°d	25°d	
200 l	1	1	1	1	1	
500 l	1	1	2	2	3	(1 x 240 l) (2 x 175 l) (3 x 140 l)
1000 l	1	1	2	4	5	(1 x 240 l) (2 x 175 l) (3 x 140 l) (4 x 105 l)
1500 l	1	1	3	5	7	(1 x 240 l) (2 x 175 l) (3 x 140 l) (4 x 105 l) (5 x 84 l)
2000 l	2	2	4	7	10	(2 x 240 l) (3 x 175 l) (4 x 140 l) (5 x 105 l) (6 x 84 l)

According to VDI 2035, the complete removal of all hardeners is only required for a heating output of P > 600 kW or SSV > 50 l/kW. All other cases only require softening to 8.4°d or 11.2°d and therefore suggest blending with raw water.

Target hardness 11.2 °d						
GH Vol.	5°d	10°d	15°d	20°d	25°d	
200 l	1	1	1	1	1	
500 l	1	1	2	2	2	(1 x 240 l) (2 x 175 l) (3 x 140 l)
1000 l	1	1	2	3	4	(1 x 240 l) (2 x 175 l) (3 x 140 l) (4 x 105 l)
1500 l	1	1	3	4	6	(1 x 240 l) (2 x 175 l) (3 x 140 l) (4 x 105 l) (5 x 84 l)
2000 l	2	2	4	5	8	(2 x 240 l) (3 x 175 l) (4 x 140 l) (5 x 105 l) (6 x 84 l)

We recommend including an analysis set for measuring the relevant parameters for conductivity and hardness in the invitation to bid. The system separator also fulfils the requirements of standard EN 1717.

Target hardness 16.8 °d						
GH Vol.	5°d	10°d	15°d	20°d	25°d	
200 l	1	1	1	1	1	
500 l	1	1	2	2	2	(1 x 240 l) (2 x 175 l) (3 x 140 l)
1000 l	1	1	2	3	3	(1 x 240 l) (2 x 175 l) (3 x 140 l) (4 x 105 l)
1500 l	1	1	3	4	4	(1 x 240 l) (2 x 175 l) (3 x 140 l) (4 x 105 l) (5 x 84 l)
2000 l	2	2	4	5	5	(2 x 240 l) (3 x 175 l) (4 x 140 l) (5 x 105 l) (6 x 84 l)

Number of MEGAFILL demineralisation units

Raw water ratio in litres

Capacity per MEGAFILL in litres

Subject to alterations