

8 Spare parts

Spare filter elements applicable for filter type	FS-B 1"-1¼"	FS-B 1½"- 2"
	Ord. no.	Ord. no.
Filter elements 80 µm (2 pcs.)	103 075	103 077
Filter elements 50 µm (2 pcs.)	103 068	103 070
Filter elements 20 µm (2 pcs.)	103 071	-
Filter elements 5 µm (2 pcs.)	103 081	103 083

Consumables and spare parts may be ordered from authorised sanitary companies or Grünbeck's customer service/authorised service company.

When inquiring, please indicate filter type, filter size and serial number (indicated on the type designation plate).



Note: Seals are wearing parts.

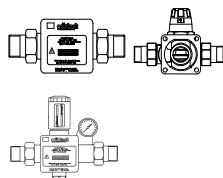
Although these parts are wearing parts, we grant a limited warranty period of 6 months for them.

9 Accessories

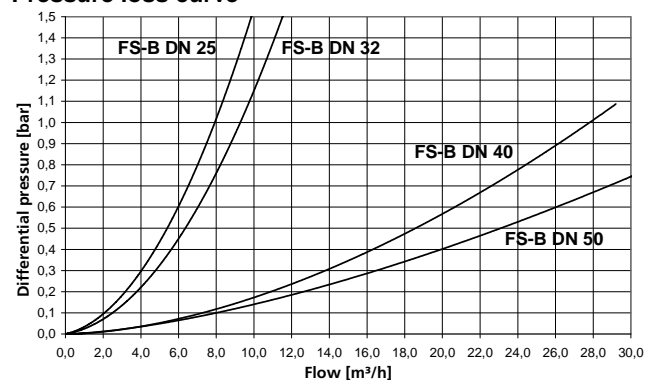
Designation	Order no.
Differential pressure monitoring of filter	upon request
Insert with non-return valve 1"	101 644e

Inserts to convert an older Grünbeck filter to an FS-B

Insert for	Order no.
FS 1"/Ultra 99 R	101 647e
FS 1¼"	101 852
FS 1½"	101 651e
FS 2"	101 652e
Connection flange A + D (V.2, V.3)	101 862
	101 646e
	101 864
Connection flange D (V1) delivered until year of construction 06/99	101 865
	101 866

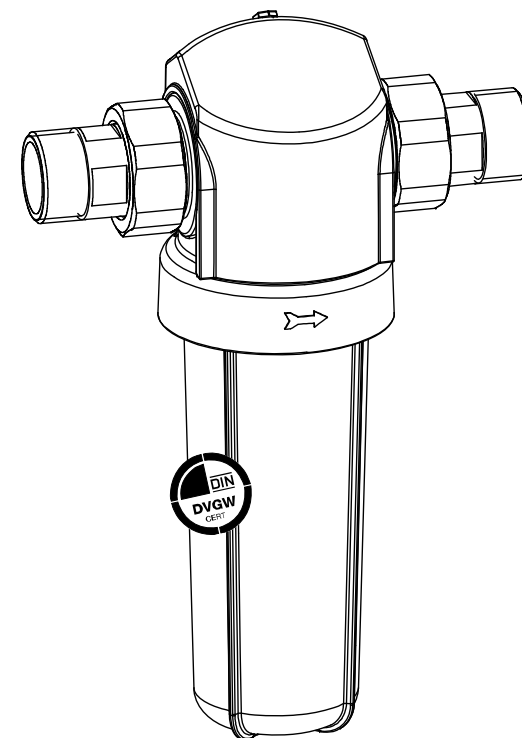


Pressure loss curve



grünbeck

Operation Manual Fine filter FS-B



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

General notes

Our systems have to be installed by an approved sanitary or heating company.

Prior to installation, check the components for shipping damage.

The devices must be protected against frost and must not be installed near heat sources which radiate a lot of heat.



Attention: Do not clean the filter with cleaning agents that contain alcohol or solvents!

In case of drinking water that contains a lot of coarse dirt, a coarse filter must be installed upstream.

1 Application

The FS-B filters are designed for the filtration of drinking water. The filters are not suited for circulation water that has been treated with chemicals. Furthermore, it is neither suited for oils, greases, solvents, soaps and other lubricating media nor for the separation of water-soluble materials. The filters may be used in the pressure and negative pressure range.

2 Technical specifications

Fine filter	FS-B			
Connection diameter	1"	1¼"	1½"	2"
Nominal connection diameter [DN]	25	32	40	50
Nominal flow at Δp 0.2(0.5) bar [m³/h]	3.7(6,0)	4.0(6,2)	11.1(19,9)	13.9(23,3)
Filter fineness [µm]	80			
Diameter of upper/ lower outlet [µm]	140/80			
Nominal pressure	PN 16			
Total height [mm]	265		508	
Replacement height for filter element [mm]	150		390	
Length with/without screw connections [mm]	182/100	191/100	283/160	277/160
Empty weight [kg]	1.2	1.4	3.7	4.4
DVGW registration mark	NW-9301BT0200			
Max. water / ambient temperature [°C]	30/40			
Order no.	101 170	101 175	101 180	101 185

3 Installation requirements

Please observe local installation guidelines and general regulations as well as technical specifications.

The installation site must be frost-proof and must ensure the protection of the filter against chemicals, dyes, solvents, vapours and direct sunlight.

4 Scope of delivery

Observe flow direction (➔ indicated on the housing)! Install voltage-free. The installation site must be frost-proof.

The filter should be installed in equally dimensioned pipes according to its nominal diameter.

- Filter with protective cover and built-in maintenance indicator.
- Screw connections with seals made of LD-PE.
- Filter element 80 µm
- Operation manual

5 Installation

As per DIN EN 806-2 and DIN 1988-200 the FS-B filter has to be installed in the cold water pipe downstream of the water meter and upstream of the distribution pipes respectively upstream of the devices to be protected. Install shut-off valves upstream and downstream of the filter (refer to fig. 1). The filter is suited for horizontal installation only.

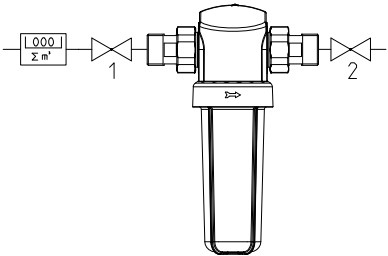


Fig. 1: Installation drawing FS-B front view

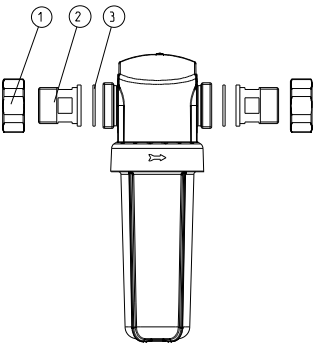


Fig. 2: View FS-B

- ① Union nut
- ② Insert
- ③ Flat seal

6 Start-up

After completion of the installation, put the filter into operation by opening the shut-off valves. Then de-aerate the piping via the nearest screw connection.

Leakage test

A leakage test must be performed on the filter directly after installation and after each time maintenance work was performed. In order to check the filter for tightness, the highest pressure admissible must be applied.

7 Inspection / Maintenance

According to the DIN Standard EN 806-5, the operator must **inspect** the filters every two months (functional inspection). During the inspection, the filter element must be checked for contamination and be replaced, if necessary (contamination and/or increased differential pressure). Check for tightness.

Furthermore, **maintenance** has to be performed by the operator or the installation company every six months.



Warning! According to DIN EN 806-5 the filter element must be replaced for hygienic reasons every 6 months. Furthermore, we recommend replacing the seal of the protective cylinder every 2 years using a set of seals.

Replacement of filter element

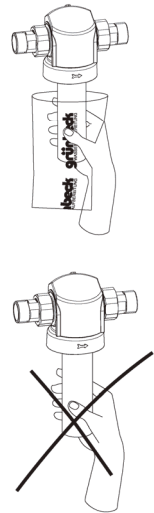


Fig. 3: Replacement of filter element

- How to proceed**
- Place a bucket beneath the filter.
 - Close the shut-off valves.
 - Depressurize the pipe.
 - Manually unscrew the filter cylinder.
 - Remove the dirty filter element from the supporting fabric and replace by new filter element. For hygienic reasons, do not touch the new filter element with bare hands.
- Hygienic filter replacement:
- Open the foil and push the filter element including the foil over the supporting fabric, pull off the foil without touching the filter element. (see fig. 3)
- Check that the sealing surfaces as well as the O-ring are clean and manually screw on the filter cylinder to the stop.
 - Start up as described in point 6.