

## Automatic filter AF 132 G

with external pressure cleaning  
Connection size DN 40, G1 1/2, cast design

### 1. Features

Filtration Group automatic backflush filters are suitable for all applications where low or medium-viscosity liquids have to be filtered.

These compact, inline filter systems are designed for automatic cleaning. The system is cleaned by rotating the filter cartridge and backflushing with external or internal pressure media.

#### Advantages:

- Low lifecycle costs because no filter material is consumed
- Precise separation quality in accordance with the surface filter principle
- Asymmetrical filter medium of the highest quality made of multiple sintered stainless steel wire mesh on a robust supporting body
- Process reliability through efficient filter cleaning
- Long service life due to solid construction and high-quality materials
- Low loss of liquid during the cleaning process
- Segmental filter cleaning with high backflush pulse
- Indication of actual filter fineness and nominal separation
- Material variants for a wide range of applications
- Modular system Filtration Group Vario for optimum filter selection
- Optional: Use in Ex-zones 1 and 2
- Easy maintenance
- Worldwide distribution



## 2. Operating principle

The Filtration Group Rückspülfilter AF 132 G backflush filter belongs to the small Vario series. The compact MAHLE automatic filter system is used for fine and micro-filtration of a variety of low-viscosity liquids.

This inline pressure filter consumes no filter material, which means there is also no need for subsequent disposal. The filter is cleaned without interrupting operation. The concentrated solids are drained off simply by opening the system for a short time.

The medium to be cleaned is guided into the filter housing under pressure. It flows inward through the Filtration Group segmented element. Particles settle on the surface of the filter medium. The filtered fluid exits the filter housing at the top opposite the inlet connection.

The filter is cleaned when a preset differential pressure limit, a set interval or a defined filtered fluid quantity is reached.

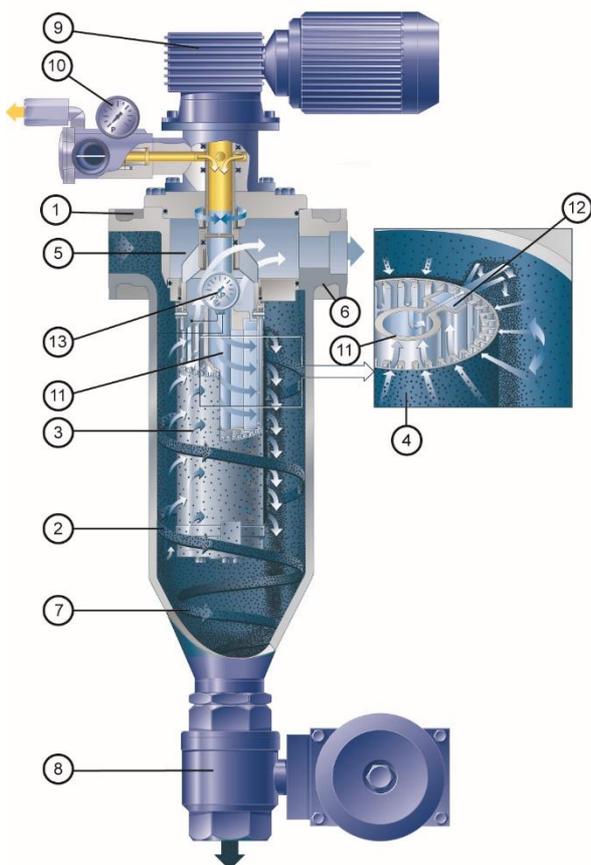
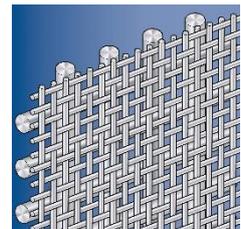
The segmented element is turned as the drain and external pressure valves are opened. The segments are then guided one at a time past the pressure channel housing on the inside. This causes them to open and close alternately. The integrated external pressure accumulator is pretensioned during closing, so that when one segment opens, an outward surge cleans the separated particles from the filter material. The particles are catapulted out as a result of this pulse cleaning principle and discharged via the drain valve. One turn suffices to clean all segments.

All filters in the Filtration Group Vario series are protected by various patents.

### Filtration Group filter elements used in AF 132 G backwash filter:

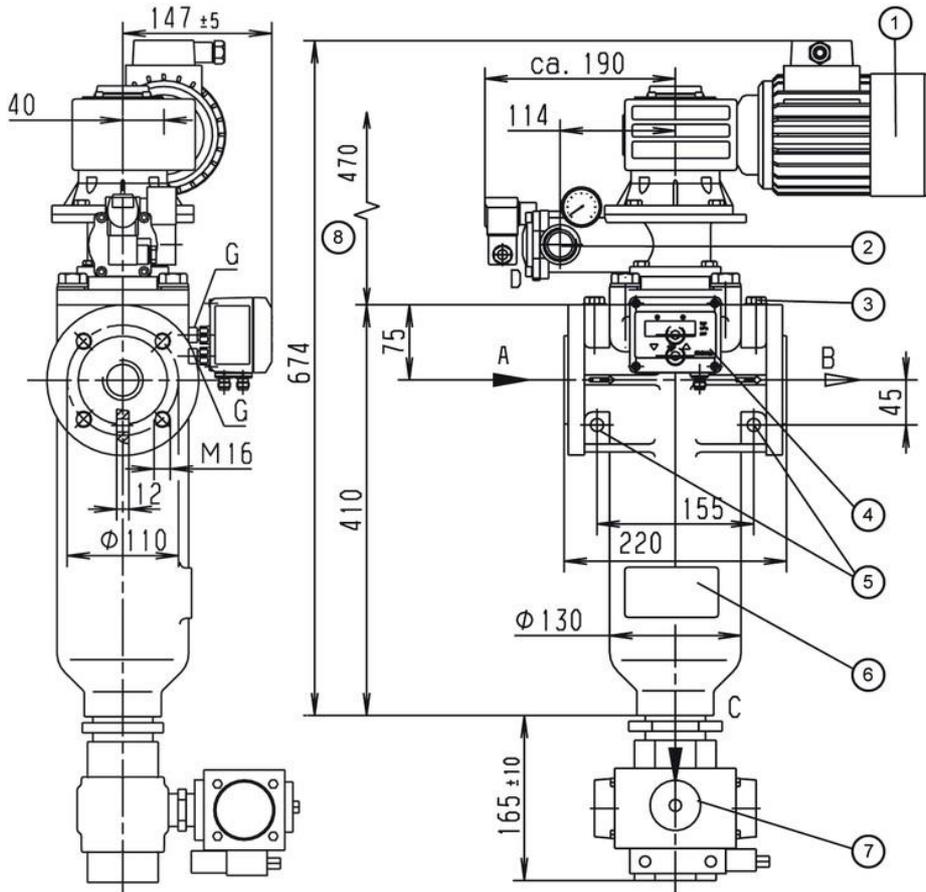
#### Filtration Group Topmesh (standard):

- Good cleaning due to asymmetric structure
- High proportion of open space
- Defined particle retention
- Various material combinations possible



- 1 Inlet connection
- 2 Inlet chamber
- 3 Filtration Group segment element
- 4 Filtration Group filter material
- 5 Filtrate chamber
- 6 Filtrate drain connection
- 7 Particle collection cone
- 8 Drain valve
- 9 Drive motor
- 10 External pressure connection, external pressure and non-return valve as well as pressure gauge  $P_f$
- 11 External pressure reservoir
- 12 External pressure nozzle
- 13 Differential pressure contact gauge

### 3. Technical Data



- 1 Cleaning drive:  
The motor can be mounted at each 90° position
- 2 External pressure valve
- 3 Vent screw G1/4
- 4 Optional: Differential pressure indicator/switch
- 5 Mounting holes Ø13
- 6 Type plate
- 7 Optional: Automatic drain valve
- 8 Clearance required = 470 mm

#### Filter data

- Max. operating pressure: 16 bar  
 Max. operating temperature: 100 °C  
 Materials:
- Housing and cover: Nodular cast iron
  - Internals: Nodular cast iron, St. 1.4301
  - Bearing bushes: PTFE based
  - Seals: FPM
  - Segmented element: 1.4571 or 1.4571/AI ( $\Delta p$  max. 10 bar)
  - Pressure channel housing: PPS-GF40
- Cover fastening: 4x hexagon screws M16  
 Connections and nominal diameters:
- A- inlet, B- outlet: G1 1/2, flange DN40/PN25
  - C-drain: G2
  - D- external pressure: G1 (air: must be reduced to G1/2 by the customer)
  - G- indicator: G1/8
  - All threaded holes acc. to DIN 3852 form Z
  - Flanges acc. to EN 1092-1
- Drive shaft seal: Lip seal with O-ring

#### Motor data

Worm gear motor  
 Multi-range winding

V	Hz	kW	U/min	A
$\Delta$ 230 $\pm$ 10%	50	0.18	17	1.2
$\lambda$ 400 $\pm$ 10%	50	0.18	17	0.7
$\Delta$ 266 $\pm$ 10%	60	0.22	21	1.2
$\lambda$ 460 $\pm$ 10%	60	0.22	21	0.7

Protection class: IP55; insulation class F; output torque: 52 Nm

#### Optional:

- Ex protection acc. to ATEX 2014/34/EU
- Electrical components in Ex II 2G T3
- Mechanical design in Ex II 2G c T3
- Worm gear motor Ex, output torque: 52 Nm

Weight 52 kg

Volume: 4 l

#### Differential pressure stability

Segmented element with topmesh: 10 bar

Other types available on request!

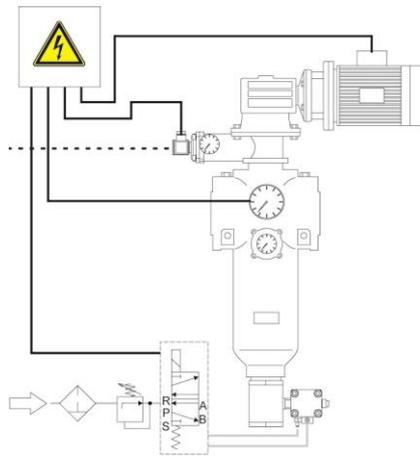
Technical data is subject to change without notice!

## 4. Design and application

Cartridge type (see section 6)	Total surface in cm <sup>2</sup>	Gap width in $\mu\text{m}$ / effective filter surface in cm <sup>2</sup>							
		10	20	30	40	60	80	100	
AF 170XX4	437	310	310	310	310	310	310	310	310

Recommended design

### Cleaning and emptying



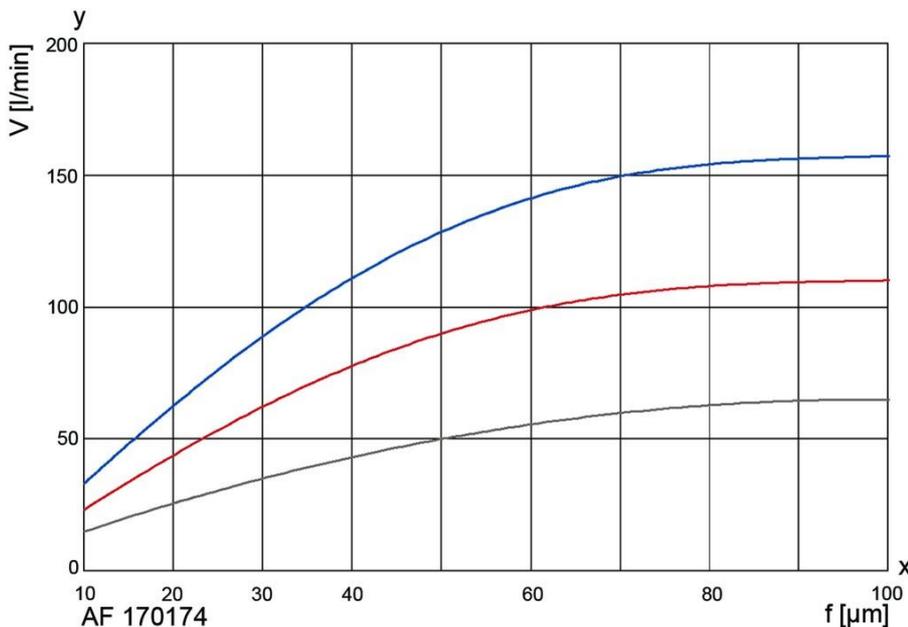
#### Fully automatic operation:

Filtration usually takes place under pressure. The filter is cleaned after a programmed time or a preset number of cycles or according to the differential pressure. We recommend cleaning the system at a differential pressure of approximately 0.5 to 0.7 bar. The cleaning motor is operated for around 4 s (about one turn of the filter cartridge). The external pressure and drain valves remain open for this period. This suffices to clean the filter thoroughly.

Refer to the Instruction manual for further information.

The Filtration Group team of specialists will be pleased to assist in any way. Tests can be carried out in the absence of reliable evaluation criteria.

## 5. Efficiency curves



The curves indicate the volume flow through the complete filter system (filter housing including cartridge) and are referred to a differential pressure of 0.3 bar. Specific process information is essential to guarantee reliable operation of an automatic filter.

Viscosity in mm<sup>2</sup>/s

- 1 mm<sup>2</sup>/s
- 33 mm<sup>2</sup>/s
- 100 mm<sup>2</sup>/s

y = Volume flow V [l/min]  
x = Gap width f [ $\mu\text{m}$ ]

## 6. Type number key

Type number key with selection example for AF 13243-221-43200 /G2											
Size											
AF 1324	1	x	65x230	No. of steps x diameter x length [mm]							
<b>Cleaning drive</b>											
	3	Gear motor 230/400 V, 50 Hz or 266/460 V, 60 Hz									
	4	Gear motor 230/400 V, 50 Hz Ex II 2G T3									
<b>Inlet and outlet connections</b>											
	2	DN 40 with G1 1/2									
<b>Permissible operating pressure in bar (housing/cover)</b>											
	2	PN 16									
<b>Material Seal FPM, bearing PTFE</b>											
	1	Cover and housing nodular cast iron, internals steel, aluminium									
	3	Cover and housing nodular cast iron, internals stainless steel 1.4301/1.4571									
	6	Cover and housing nodular cast iron with delta seal coating, internals stainless steel 1.4301									
<b>Differential pressure indicator and gauge</b>											
	1	PiS 3076, switching level at 1.2 bar, static 63 bar, Aluminium/FPM									
	2	PiS 3076, switching level at 0.7 bar, static 63 bar, Aluminium/FPM									
	4	PiS 3170, digital $\Delta p$ gauge, 2 switching levels settable from 0-16 bar									
<b>Valves and control throttles</b>											
	3	External pressure valve G1 for liquid, 24 V									
	4	External pressure valve G1 for liquid, 230 V									
<b>Drain valve</b>											
	2	Ball valve, electropneumatic 24 V									
	3	Ball valve, electropneumatic 230 V									
	4	Ball valve, electric 24 V									
	5	Ball valve, electric 230 V									
<b>Cleaning valve</b>											
	0	Without/special version									
<b>Optional features</b>											
	0	Without/special version									
AF 1324	3	-	2	2	1	-4	3	2	0	0	-XXXX (end number for special version)/G2*

\*end number completion:

**G2** cast iron, Version 2

End number	Special version
3001	Standard complete inner assembly, without housing or drive
3002	Standard complete inner assembly, without housing, with drive
3700	PTFE seals
Other numbers	On request

Type number key with selection example for coiled or welded cartridges for AF 170

Series						
AF 170 Segmented element with topmesh (10 µm to 100 µm)						
	Material	Inner core	Filter medium		Clamp rings	
	<b>Segmented element</b>					
	17	Al	1.4571		St	
	20	Al/hc.	1.4571		1.4571	
Overall length Diameter x length in mm						
	4	65 x 230				
Gap width/rating in µm (see 4. Design and application)						
	001	10 µm	004	40 µm	010	100 µm
	002	20 µm	006	60 µm		
	003	30 µm	008	80 µm		
Other filter ratings on request						
<b>AF 170</b>	<b>17</b>	<b>4</b>	<b>-006</b>			

### 7. Spare parts

Position	Designation	Material number	
		FPM/C steel	PTFE/VA
1	Bush kit		76351514
2	Seal kit (complete)	70320685	
3	Pressure channel mould		76351209
4	Filter element	see type-plate	

Please contact us for detailed technical information, any open questions about options, accessories and for general expert advice. Completion of the relevant questionnaire would facilitate in the coordination of all important parameters.

Comprehensive documentation on our filter range, filter elements and accessories can be provided. About installation and operation, please refer to the Instruction Manual.