



MAHLE[®]
Industriefilter

Automatic Filter

with pulsating external pressure segment cleaning
and integrated cyclone effect

AF 133 G

Cast version

for liquids

Connection sizes: G2, flange DN 50 and DN 65

1. Principle of operation

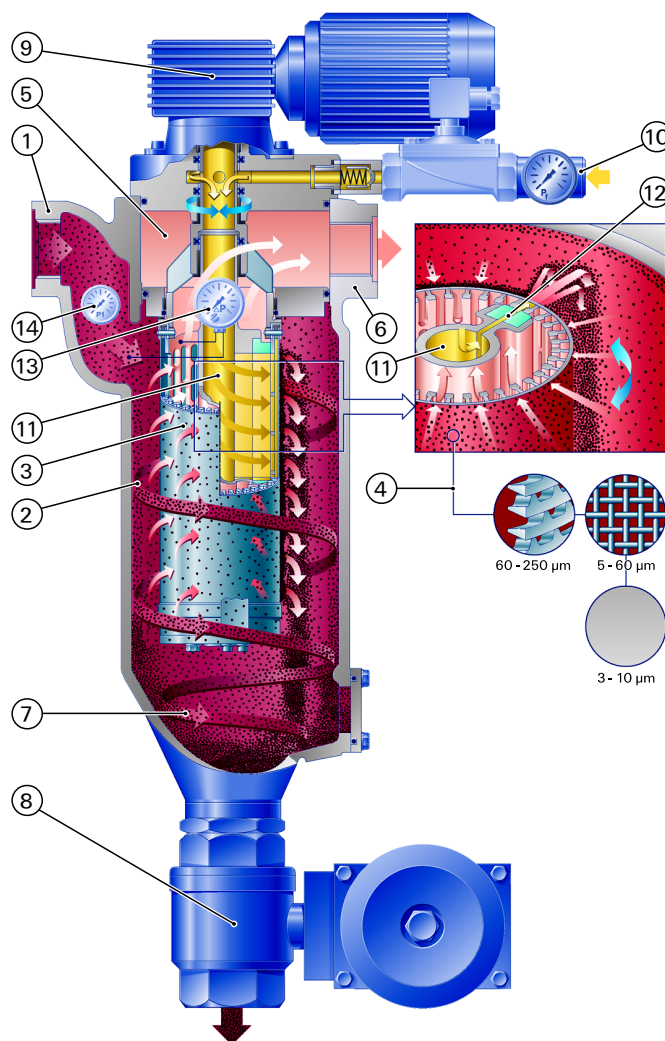
The sturdy and compact **MAHLE automatic filter system** with integrated cyclone effect is used for the extra-fine and fine filtration of low-viscosity liquids. This in-line pressure filter, which can be cleaned in-process with a low filtrate flow, requires no waste disposal measures such as used filter material.

The integrated cyclone effect facilitates pre-separation of heavy particles, which gather in the collection cone.

The liquid then flows inward through the **MAHLE filter element**. The required separation of the remaining particles takes place on the **MAHLE filter element**. The filtrate then flows out of the filter at the top, opposite the inlet connection.

Once the differential pressure limit or a set time interval has been reached, the segmented element is rotated and cleaned in the reverse direction with compressed air or filtered liquid, and the external pressure and drain valves are opened at the same time. The segments pass the external pressure nozzle and the nozzle alternates between open and closed tightly. The pressure builds up in the external pressure reservoir when the nozzle is fully closed. Then, whenever it is opened, an outward **blast of pressure** cleans the particles off the filter material. It only takes a short time to clean all the segments. During the short cleaning period, the residue deposited in the collection cone and the particles cleaned off the element are discharged simultaneously through the drain valve.

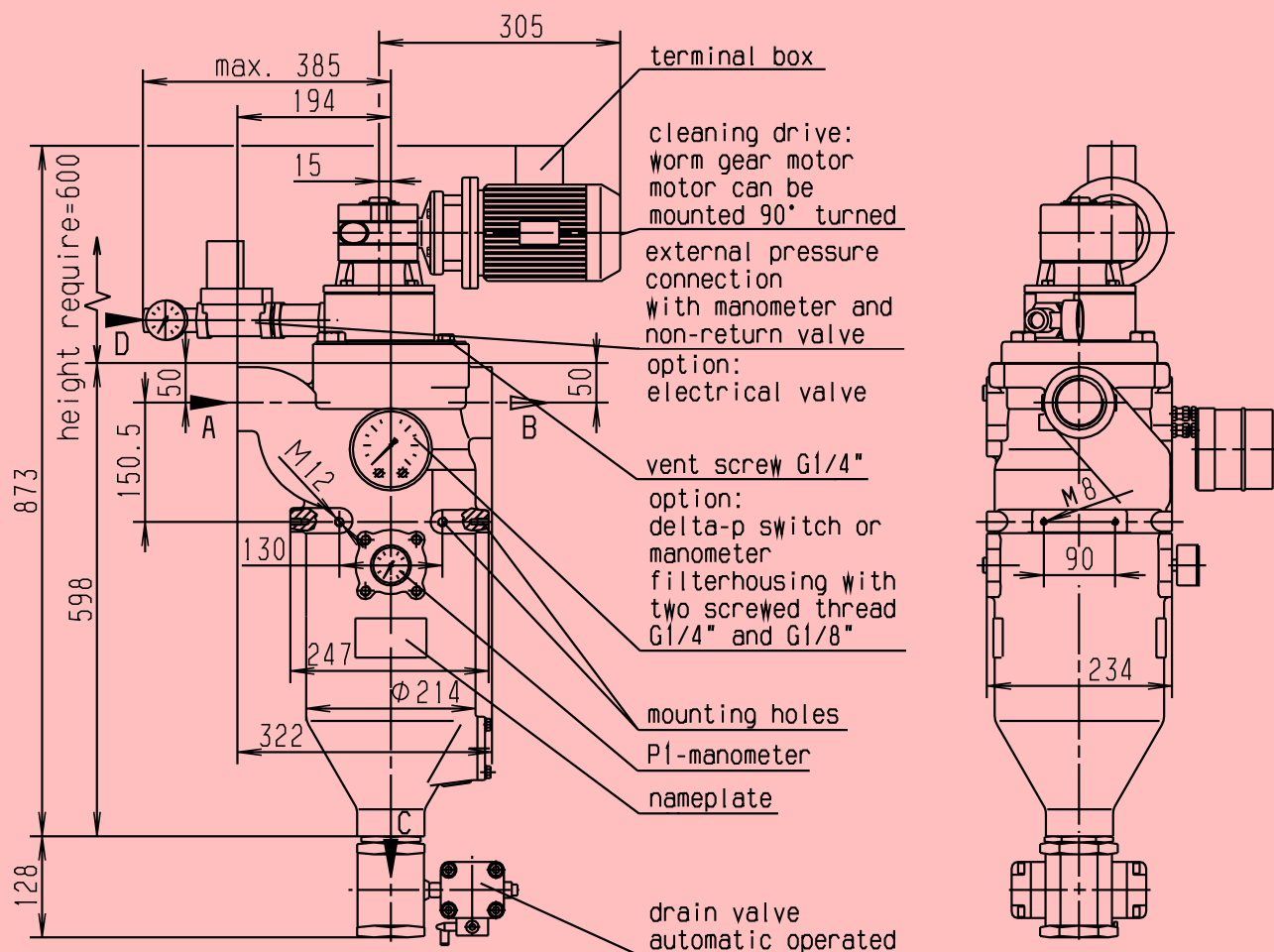
An automatic filter variable series, based on this filter and protected by various patents allows great flexibility in responding to a wide range of different filtration requirements, with this device's various cleaning systems and filter materials.



1. Inlet connection
2. Outer inlet chamber
3. Immersion pipe
4. Inner inlet chamber
5. MAHLE segmented element
6. MAHLE filter materials
7. Filtrate chamber
8. Filtrate discharge point
9. Residue collection cone

10. Drain valve
11. Drive motor
12. External pressure connection, external pressure and check-back valve and pressure gauge
13. External pressure reservoir
14. External pressure nozzle
15. Differential pressure gauge
16. P1 pressure gauge

2. Dimensions and data



Motor data

Worm gear motor
MB winding

V	Hz	kW	rpm	A
Δ 230 ± 10 %	50	0,18	9,3	0,7
Λ 400 ± 10 %	50	0,18	9,3	0,4
Δ 266 ± 10 %	60	0,22	11,2	0,7
Λ 460 ± 10 %	60	0,22	11,2	0,4

Degree of protection: IP 55 insulation class F; output torque: 97 Nm

Worm gear motor with explosion protection
EExe II T4; output torque: 97 Nm

V	Hz	kW	rpm	A
Δ 230 ± 10 %	50	0,18	9,3	0,7
Λ 400 ± 10 %	50	0,18	9,3	0,4

Dimensions Type	Contents (l)	Weight (kg)	Cleaning
AF13363-...-...	12	92	Gear motor
AF13364-...-...	12	92	Gear motor (expl.-prot.)

Filter data

Permissible operating pressure: 16, 25 bar
Permissible operating temperature: max. 120 °C

Perm. differential pressure	for
10 bar	segmented element with top-mesh or high-grade steel fleece
25 bar	segmented element with V-profiled spacer winding

	Possible on request			
	Series	With a re- ducing adapter	With a screw-in flange	
A-B / Inlet/outlet connection:	G 2	G 1	DN 50	DN 65
C / Drain connection:	G 2	G 1	G 2	G 2
D / Ext. pressure connection: G 1/2 for air, G 1 for fluids				

All screw-in holes conform to DIN 3852 X-type
DN 50 / DN 65 flanges conform to DIN 2527

Standard materials: Housing and cover NCI 40, DIN 50049/3.1B
Installed parts st. 1.4301, NCI 40, PTFE
Bearing bushes PTFE-based
FPM (Viton) seals

Cover lock: 4 x hexagon head screws, M20

Drive shaft seal: FPM (Viton) quad rings

Outer paintwork: Artificial resin primer, blue conforming to RAL 5007

Other finishes available on request

Subject to technical modifications!

3. Type designation

Type designation for filter housings

Specimen selection:

AF 1336 3 - 13 2 1 - 4 1 2 0 0 / G 1																														
Size, quantity, ø and length of filter element in mm	Cleaning drive		Inlet / outlet connections		Permissible operating pressure [bar] Housing / cover	Standard material with FPM seal + PTFE bearing		Differential pressure display / switch	External pressure valve		Drain valve 1)			0	End no. for	Design variants	Type													
1 x ø 110 x 265	3	Standard gear motor 230/400 V/50 Hz 266/460 V/60 Hz 10 rpm	12	G 1	2	PN 16	1	Housing, cover, nodular cast iron 40, internal parts ch. steel or similar	1	PIS-3076/ 1,2 bar stat. 63 bar Al/FPM	1	External pressure valve G1 electric 24 V / DC	1	-			none	Standard filter	Cast iron finish											
		4	Standard gear motor 230/400 V/50 Hz EExe II T4 10 rpm	13	G 2	3														PN 25	3	Housing, cover, NCI 40, internal parts high-grade steel or similar	2	PIS 3076/ 0,7 bar/ stat. 63 bar Al/FPM	2	External pressure valve G1 electric 230 V / AC	2	Automatic ball valve, el.-pneum. 24 V / DC double- action	3001	Standard filter insert, complete without housing and motor
			15	Screw-in flange DN 65	5	Housing, cover, NCI 40, chemical nickel-plated internal parts, high-grade steel or similar														4										
	0	Others available on request	Others available on request	6			Housing, cover, NCI 40 with Ormecon-coating, internal parts high-grade steel or similar	5	Automatic ball valve, electric 24 V / DC	Automatic ball valve, electric 230 V / AC	Others available on request	3700	PTFE seals	Different design, see end no.	Welded finish available on request															
0	Different design, see end no.	0	Different design, see end no.	0	Different design, see end no.	0	Different design, see end no.									0	Without or different design, see end no.	0	Without or different design, see end no.	0	Without or different design, see end no.	0			Serial design number					

Unless otherwise specified, accessories are made from the same or similar materials and are subject to at least the permissible filter operating pressure.

The complete filter insert is built as standard at the highest pressure level. If the cleaning motor is used in explosion-protected design, the drain valve is also designed to be explosion-protected. The filter is equipped as standard with a check-back valve and a pressure control gauge for P_1 and P_f .

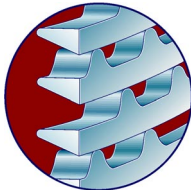
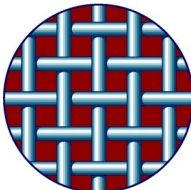
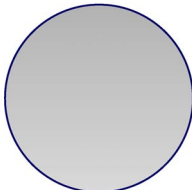
Inlet / outlet connection	G1	G2 / DN 50	DN 65
1) Drain valve	G1	G2	G2

Type designation for segmented elements

Specimen selection:

AF 170 17 6 - 006 / E1									
AF	Series	Profile support material	Top-mesh, high-grade steel fleece or V-profiled spacer winding	Supporting ring material	$\varnothing$ x length n mm	Filter gauge / gap in μ m	Serial design number		
170	Segmented element with top-mesh 5 - 60 μ m	17	Al	1.4571	St	6	$\varnothing$ 110 x 265	0003 0005 001 002 003 004 006 008 010 016 025	3 5 10 20 30 40 60 80 100 160 250
140	Segment element with a V-profiled spacer winding 60 - 250 μ m	20	Al-hard caodet	1.4571	1.4571				
180	Segment element with a high-grade steel fleece 3 - 10 μ m								
Others available on request									
								Others available on request	

4. Filter materials

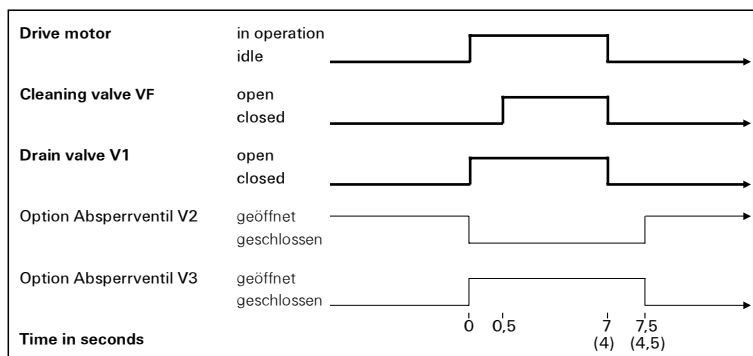
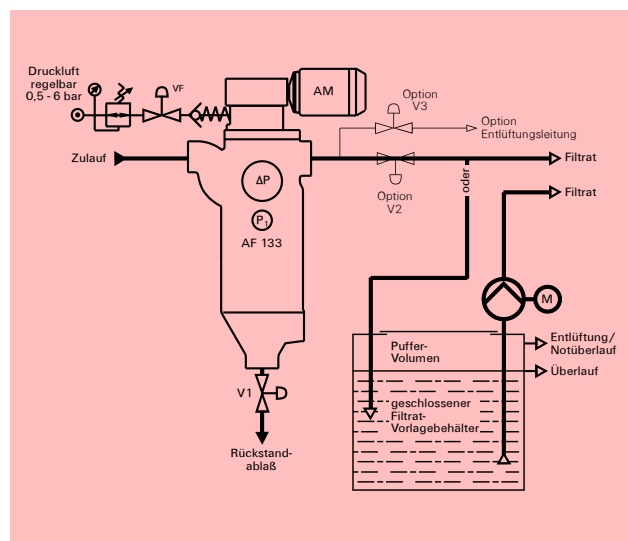
Filter material	 V-profiled spacer winding		 Top-mesh		 Reinforced high-grade steel fleece	
Nominal filter gauge / gap width in μm	Open filter surface		Open filter surface		Porosity	
	cm^2	%	cm^2	%	—	%
3 μm	—	—	—	—	—	65
5 μm	—	—	25	4	—	—
10 μm	—	—	38	6	—	72
20 μm	—	—	201	32	—	—
30 μm	—	—	244	39	—	—
40 μm	—	—	251	40	—	—
60 μm	88	14	251	40	—	—
80 μm	119	19	—	—	—	—
100 μm	138	22	—	—	—	—
160 μm	156	25	—	—	—	—
250 μm	194	31	—	—	—	—
Filtration effect	■■■■■		■■■■■		■■■■■■■	
Cleaning behaviour	■■■■■■■		■■■■■		■■■■■	
Differential-pressure strength	■■■■■■■		■■■■■		■■■■■	

Evaluation scale: ■■■■■■ very good
■ bad

Other nominal filter gauges / gap widths or filter materials on request

The permissible volumetric flow and the filtration and cleaning behaviour of the fluids are evaluated depending on the viscosity and properties, as well as the size, condition and concentration of the solid matter or particulates in the fluid stream.

5. Standard cleaning control



The cleaning process can be started by means of a differential pressure contact set to a limit, via time intervals or by counted machine cycles.

Our consultants will be happy to assist you. If you do not have reliable evaluation criteria to hand, tests can also be performed.



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