

Automatic Filter

with scraper and pulsating
external pressure segment cleaning

AF 153 G

Casted version

for liquids

Connection sizes: G 2, flange DN 50 and DN 65

1. Principle of operation

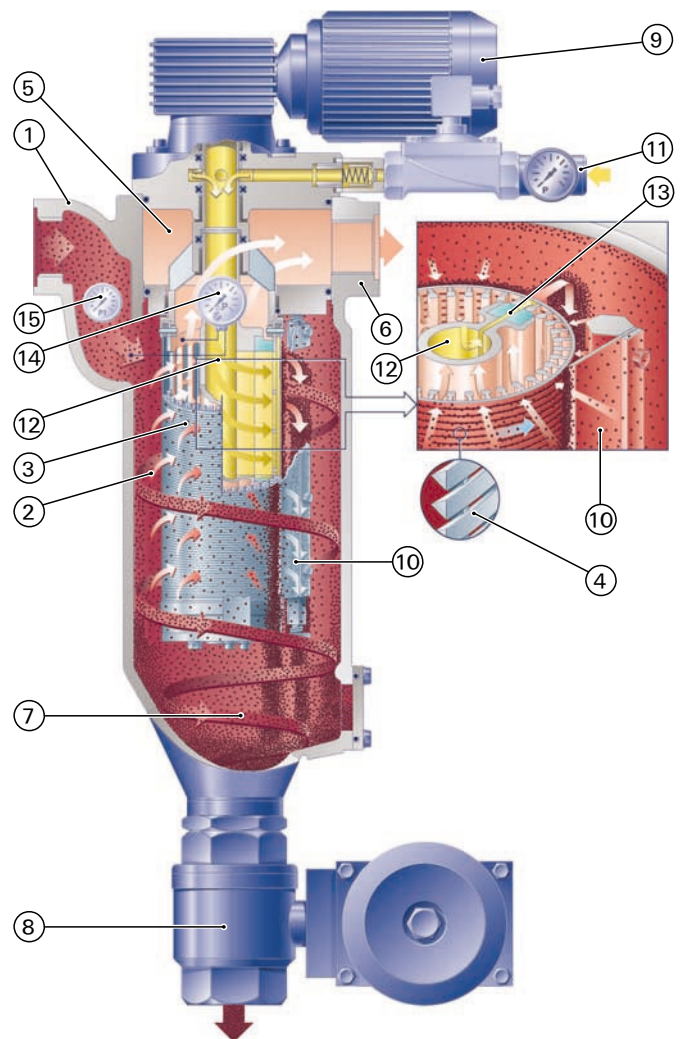
The sturdy and compact **MAHLE automatic filter system** is used for the fine filtration of a wide range of different liquids. This in-line pressure filter combines mechanical scraper and external pressure segment cleaning. It necessitates no waste disposal, for example, in the case of used filter material.

After a tangential in-flow, the liquid then flows inward through the **MAHLE segment element** from the outside. The defined separation of the residual particles takes place on the **MAHLE triangular profile winding**. The filtrate then flows out of the filter at the top, opposite the in-flow connection point.

Once the differential pressure limit or the set interval have been reached, the element is cleaned by turning it on the outside against a scraper, which moves with a spring action, and on the inside against a downstream external pressure valve, and the external and drain valves are opened at the same time. The particles or substances on the edge gaps are cleaned off first of all by the scraper and scraped off longitudinally from the gap which extends inwards. In addition, the segments of the element pass the external pressure nozzle in consecutive order. The nozzle alternates between open and closed tightly. The pressure builds up in the external pressure reservoir when the nozzle is closed tightly. Whenever it is opened, **pressure cleaning** takes place in each segment by means of compressed air or filtered liquid.

During a short revolution cycle, the residue deposited in the collection cone and the particles cleaned off the element are emptied through the drain valve.

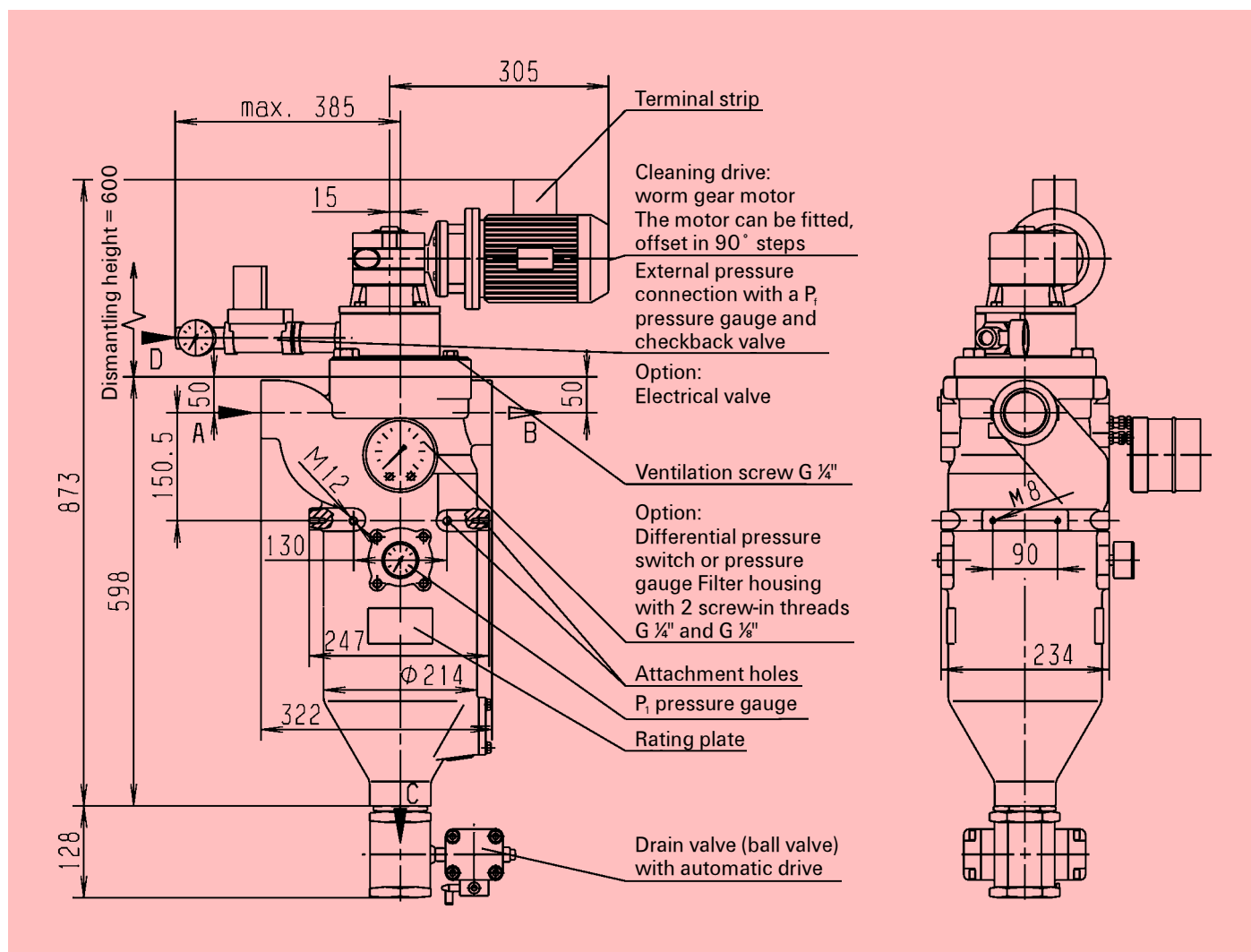
An automatic filter variable series, based on this filter and protected by various **patents** allows great flexibility in responding to a wide range of different filtration requirements, with different cleaning systems and filter materials.



1. Tangential inlet connection
2. In-flow chamber
3. MAHLE segment element
4. MAHLE triangular profile winding
5. Filtrate chamber
6. Outlet connection
7. Residue collection cone
8. Drain valve
9. Drive motor

10. Scraper
11. External pressure connection point, external pressure and checkback valve, as well as P, pressure gauge
12. External pressure reservoir
13. External pressure nozzle
14. Differential pressure contact-making pressure gauge
15. P, 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	1,2
λ 400 ± 10 %	50	0,18	9,3	0,7
Δ 266 ± 10 %	60	0,22	11,2	1,1
λ 460 ± 10 %	60	0,22	11,2	0,7

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

Worm gear motor with explosion protection
EExe II part 4; output torque: 97 Nm

V	Hz	kW	rpm	A
230 ± 10 %	50	0,18	9,3	1,2
400 ± 10 %	50	0,18	9,3	0,7

Dimensions	Contents	Weight	Cleaning
Type	(l)	(kg)	
AF15363-....-	12	92	Gear motor
AF15364-....-	12	92	Gear motor (expl.-prot.)

Standard version designed for group 2 liquids in accordance with EC Directive 97/23/EC Article 9

Other designs available on request

Subject to technical modifications!

Filter data

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

Perm. differential pressure	for
25 bar	segment element with a triangular profile winding

	Possible on request			
	Series	With reduction	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 liquid			

All screw-in holes, conforming to DIN 3852, X-type
Flanges of DN 50 / DN 65, conforming to DIN 2527

Standard materials: Housing and cover NCI 40
Option: certificate conf. to EN 10204 - 3.1B
Installations st. 1.4301, NCI 40, PTFE
Bearing bushes PTFE-based
Seals, FPM (Viton)

Cover lock: 4 x hexagon head screws, M20

Drive shaft seal: Quad rings made from FPM (Viton)

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

3. Type key

Type key for filters without a segment element

Specimen selection:

AF 1536		3	-	13	2	1	-	4	1	2	0	0	/ G 1			
Size, quantity, $\varnothing$ and length of the segment element in mm		Cleaning drive	In-flow / drain connections	Permissible operating pressure [bar] Housing / cover	Standard material with FPM seal + PTFE bearing	Differential pressure display / pressure gauge with el. contact	External pressure valve	Drain valve 1)			End no. for	Design variants	Type			
1 x $\varnothing$ 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 G 1/2 for air, 24 V / DC	2 Automatic ball valve, el.-pneum., 24 V / DC double-action	Free	Free	none	Standard filter	Cast iron finish	Serial design number		
	4	Standard gear motor 230/400 V/50 Hz EExe II Part 4 Others available on request	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 G 1/2 for air, 230 V / AC	3 Automatic ball valve, el.-pneum., 230 V / AC double-action			3001	Standard filter insert, complete without housing and motor				
			14 Screw-in flange DN 50	Others available on request		4 delta-p contact-making pressure gauge 0 – 1,6 bar	3 External pressure valve G 1 for liquid, 24 V / DC	4 Automatic ball valve, el. 24 V / DC			3002	Standard filter insert, complete without housing, with ratchet or motor				
			15 Screw-in flange DN 50			4 External pressure valve G 1 for liquid, 230 V / AC	5 Automatic ball valve el. 230 V / AC Others available on request	3700			PTFE seals Others available on request					
	0	Without or 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.							Welded finish available on request	

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 checkback valve and a pressure control gauge for P_1 or P_f .

In-flow / drain connection	G1	G2 / DN 50	DN 65
1) Drain valve	G1	G2	G2

Type key for segment elements

Specimen selection:

AF 130		17				6		-		006		/ E1	
AF Series	Profile support material		High-grade steel foil, topmesh, V-profiled nap winding or high-grade steel fleece	Supporting ring material	Width profile winding in mm	Ø x length in mm		Filter gauge / gap in µm		Serial design number			
AF 130 Segment element with a triangular profile winding	17	Al	1.4571	St	0,5	6	Ø 110 x 265	002 003 004 006 008 010	20 30 40 60 80 100				
	20	Al	1.4571	1.4571	0,5	6	Ø 110 x 265	Others available on request					
	Others available on request												

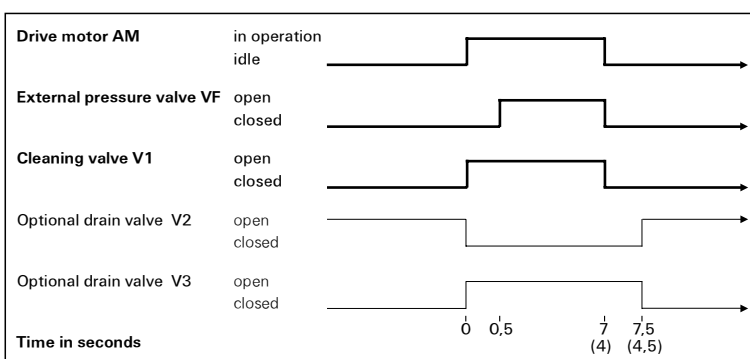
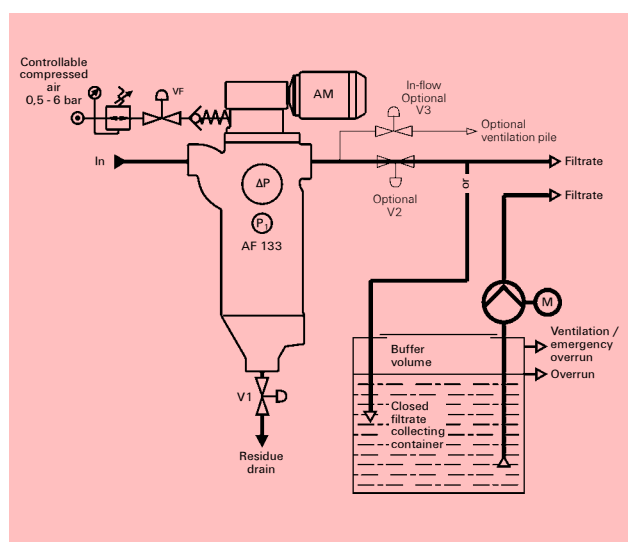
4. Filter materials

Type of coil	Total filter surface cm ²	Effective gap area cm ²					
		20 µm	30 µm	40 µm	60 µm	80 µm	100 µm
AF 130176-...	881,3	22	38	44	69	92	107

Other nominal gauges / filter materials available on request!

The permissible volumetric flow and the filtration and cleaning behaviour of the suspensions are evaluated depending on the viscosity and properties, as well as the size, condition and concentration of the particles or substances which occur.

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 counting machine cycles.

Our consultants will be happy to assist you.

Subject to technical changes!



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