

FMM series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 300 l/min



High Pressure filters

In-line

Maximum working pressure up to 42 MPa (420 bar)

Flow rate up to 300 l/min

FMM is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines.

They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 250 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N", for use with filters provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Agricultural machines
- Mobile machines

Filter housing materials

- Head: Painted cast iron, black RAL 9005
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 600 kPa (6 bar) $\pm 10\%$
- Other opening pressures on request.

Δp element type

- Microfiber filter elements - series N-R: 20 bar
- Microfiber filter elements - series S: 210 bar
- Wire mesh filter elements - series N: 20 bar
- Fluid flow through the filter element from OUT to IN

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

In-line Inlet/Outlet

Note

FMM filters are provided for vertical mounting



Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]						
	Length	1	2	3	4	5	Length	1	2	3	4	5
FMM 050		3.11	3.48	3.90	4.36	5.54		0.34	0.48	0.63	0.81	1.23
FMM 150		7.50	9.50	10.90	-	-		0.60	1.00	1.25	-	-

Filter series	Length	Filter element design - N Series						Filter element design - S Series				
		A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FMM 050	1	42	43	79	82	106	147	29	39	57	59	74
	2	52	57	85	96	121	149	45	49	76	88	114
	3	66	69	97	106	130	150	58	61	89	99	125
	4	83	89	113	115	134	152	74	80	106	108	129
	5	107	110	130	134	141	154	93	95	111	121	139
FMM 150	1	81	88	156	163	179	295					
	2	142	145	227	230	236	312					
	3	170	180	242	245	263	315					

Maximum flow rate for a complete pressure filter with a pressure drop $\Delta p = 1.5$ bar.

The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

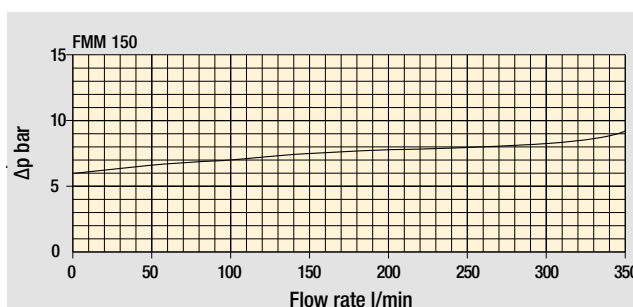
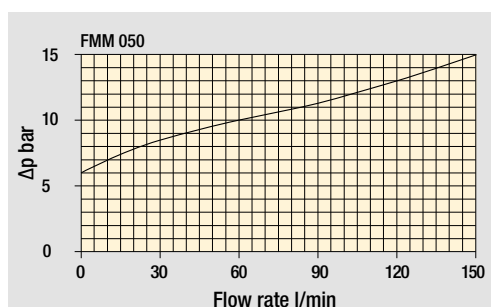
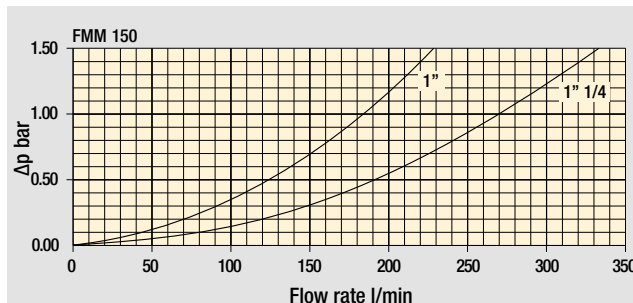
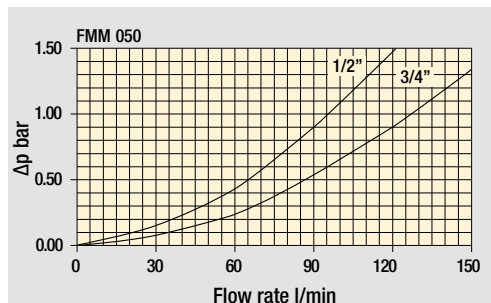
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

Hydraulic symbols

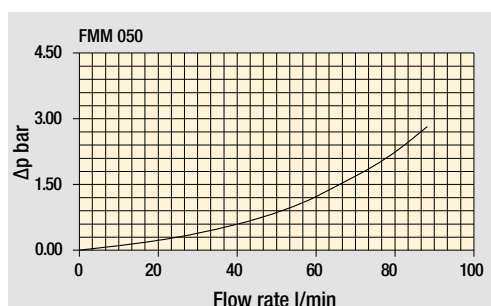
Filter series	Style S	Style B	Style T	Style D
FMM 050	•	•	•	•
FMM 150	•	•	•	•

Pressure drop

Filter housings
 Δp pressure drop



Bypass valve
pressure drop



Filter housing
with check valve

Valves

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Series and size	Configuration example: FMM050 3 B A G A10 N P01							
FMM050								
Length								
1 2 3 4 5								
Valves								
S Without bypass								
B With bypass 6 bar								
T With check valve, without bypass								
D With check valve, with bypass 6 bar								
Seals								
A NBR								
V FPM								
Connections								
A M18x1.5 - ISO 6149								
B M22x1.5 - ISO 6149								
C G 1/2"								
D G 3/4"								
E 1/2" NPT								
F 3/4" NPT								
G SAE 8 - 3/4" - 16 UNF								
H SAE 12 - 1 1/16" - 12 UN								

Filtration rating (filter media)		
A03 Inorganic microfiber	3 µm	
A06 Inorganic microfiber	6 µm	
A10 Inorganic microfiber	10 µm	
A16 Inorganic microfiber	16 µm	
A25 Inorganic microfiber	25 µm	
M25 Wire mesh	25 µm	

		Valves				
Element	Δp	S	B	T	D	
N	20 bar		•			
R	20 bar				•	
S	210 bar	•		•		

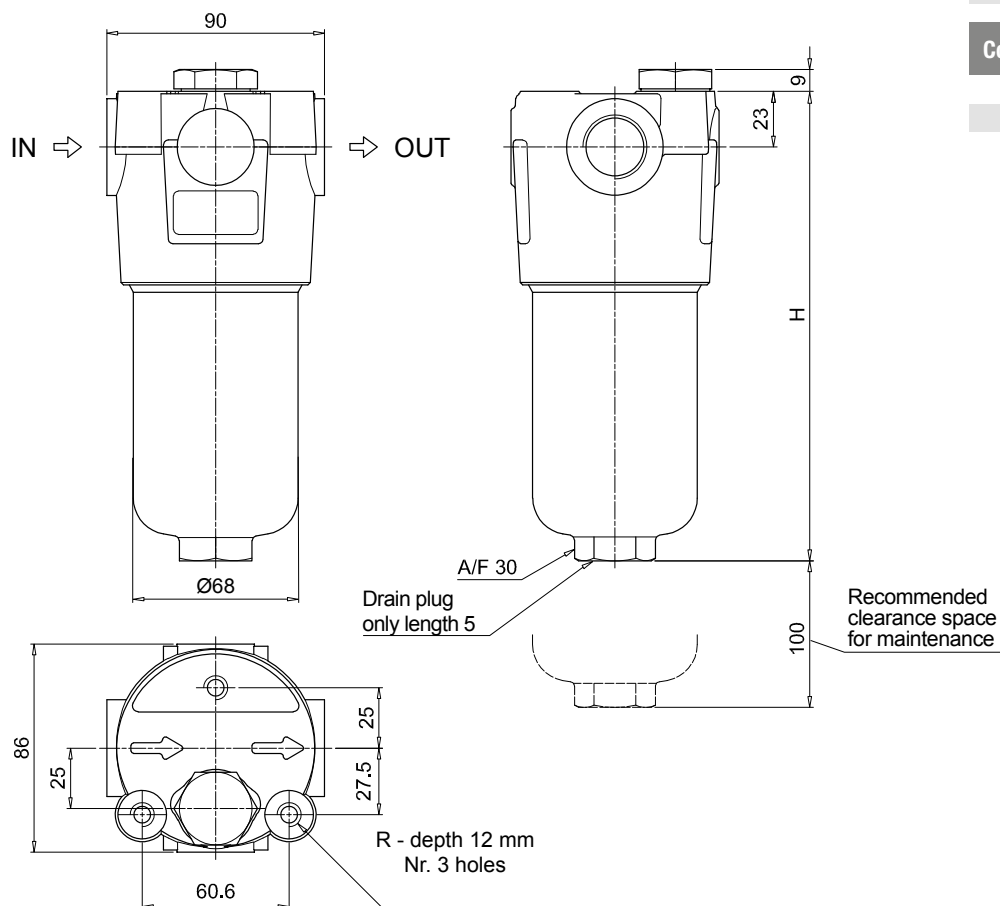
Execution	
P01	Upper connection for clogging indicator
P02	Without connection for clogging indicator
P03	Frontal connection for clogging indicator
Pxx	Customized

FILTER ELEMENT

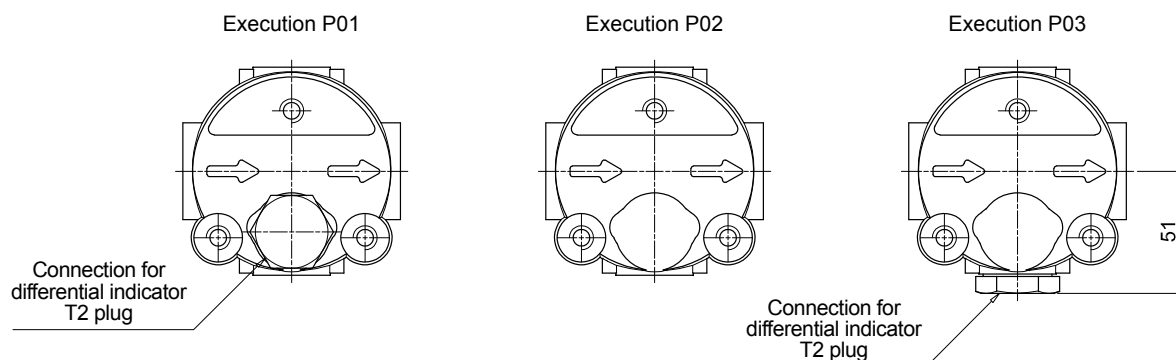
Element series and size	Configuration example: HP050 3 A10 A N P01					
HP050						
Element length						
1 2 3 4 5						
Filtration rating (filter media)						
A03 Inorganic microfiber	3 µm					
A06 Inorganic microfiber	6 µm					
A10 Inorganic microfiber	10 µm					
A16 Inorganic microfiber	16 µm					
A25 Inorganic microfiber	25 µm					
M25 Wire mesh	25 µm					
Seals						
A NBR						
V FPM						
Element Δp						
N	20 bar					
R	20 bar					
S	210 bar					
Execution						
P01	MP Filtri standard					
Pxx	Customized					

ACCESSORIES

Differential indicators		page			page
DEA	Electrical differential indicator	577	DLE	Electrical / visual differential indicator	580
DEH	Hazardous area electronic differential indicator	577-578	DTA	Electronic differential indicator	581
DEM	Electrical differential indicator	578-579	DVA	Visual differential indicator	581
DLA	Electrical / visual differential indicator	579-580	DVM	Visual differential indicator	581
Additional features		page			
T2	Plug	582			



FMMO50	
Filter length	H [mm]
1	158
2	195
3	237
4	285
5	407
Connections	R
A-B-C-D	M10
E-F-G-H	3/8" UNC



Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example:									
FMM150		FMM150	2	B	A	D	2	M25	N	P01	
Length											
1 2 3											
Valves											
S	Without bypass										
B	With bypass 6 bar										
Seals											
A	NBR										
V	FPM										
Connections											
C	G 1"										
D	G 1 1/4"										
E	1" NPT										
F	1 1/4" NPT										
G	SAE 16 - 1 5/16" - 12 UN										
H	SAE 20 - 1 5/8" - 12 UN										
Connection for differential indicator											
1	Without connection										
2	Upper connection										
3	Frontal connection										
Filtration rating (filter media)											
A03	Inorganic microfiber 3 μm	A16	Inorganic microfiber	16 μm							
A06	Inorganic microfiber 6 μm	A25	Inorganic microfiber	25 μm							
A10	Inorganic microfiber 10 μm	M25	Wire mesh	25 μm							
						Element Δp		Execution			
						N 20 bar		P01 MP Filtri standard			
								Pxx Customized			

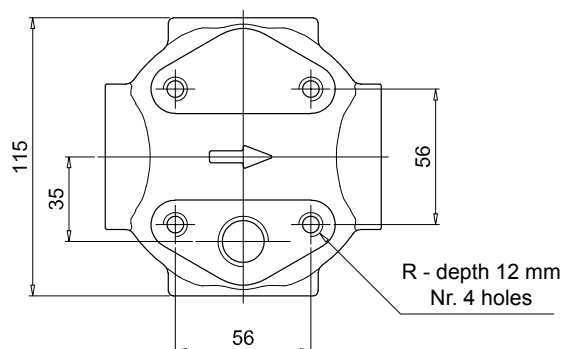
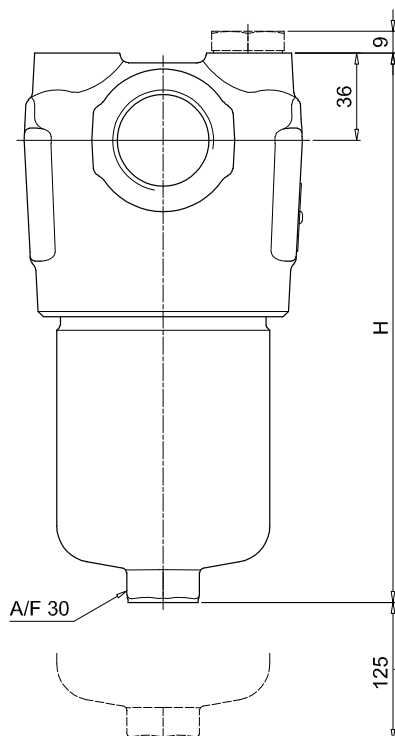
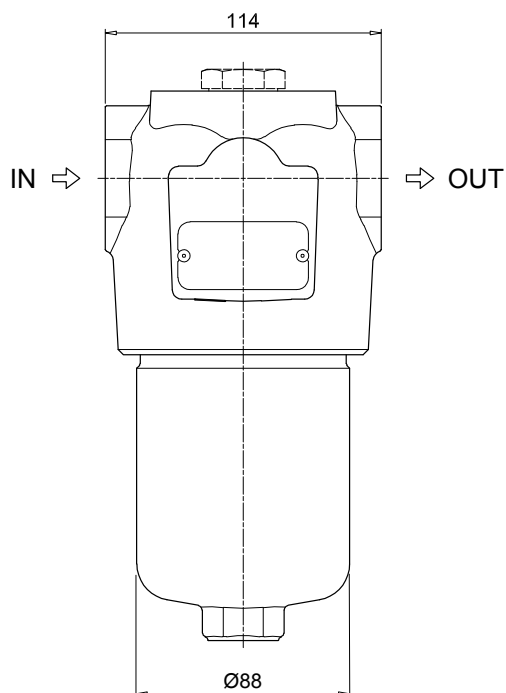
FILTER ELEMENT

Configuration example: **HP150** **2** **M25** **A** **N** **P01**

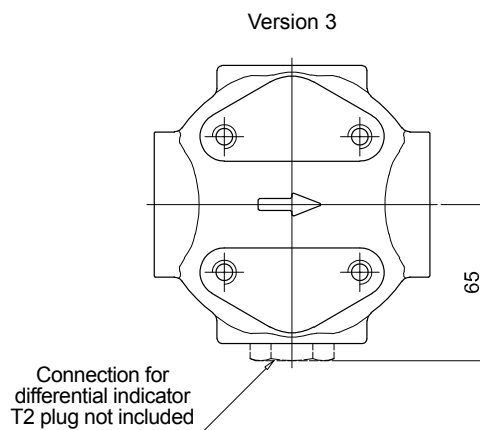
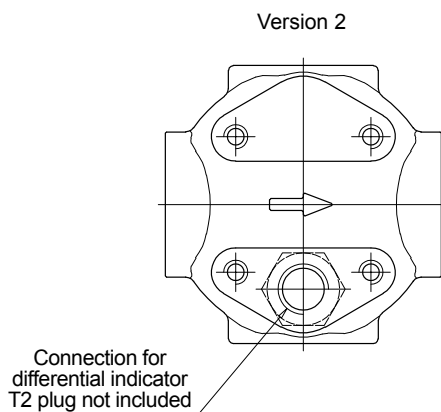
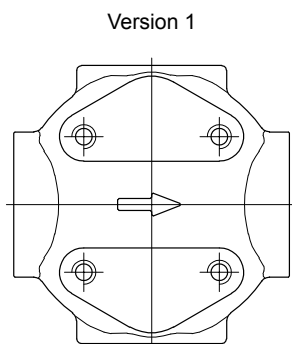
Element series and size	Element length	Filtration rating (filter media)	Seals	Element Δp	Execution
HP150	1 2 3	A03 Inorganic microfiber 3 μm A06 Inorganic microfiber 6 μm A10 Inorganic microfiber 10 μm A16 Inorganic microfiber 16 μm A25 Inorganic microfiber 25 μm M25 Wire mesh 25 μm	A NBR V FPM	N 20 bar	P01 MP Filtri standard Pxx Customized

ACCESSORIES

Differential indicators		page			page
DEA	Electrical differential indicator	577	DLE	Electrical / visual differential indicator	580
DEH	Hazardous area electronic differential indicator	577-578	DTA	Electronic differential indicator	581
DEM	Electrical differential indicator	578-579	DVA	Visual differential indicator	581
DLA	Electrical / visual differential indicator	579-580	DVM	Visual differential indicator	581
Additional features		page			
T2	Plug	582			



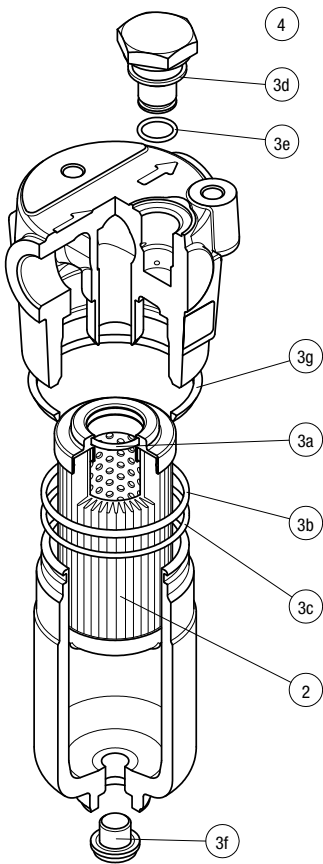
FMM150	
Filter length	H [mm]
1	230
2	340
3	415
Connections	R
C-D	M10
E-F-G-H	3/8" UNC



FMM SPARE PARTS

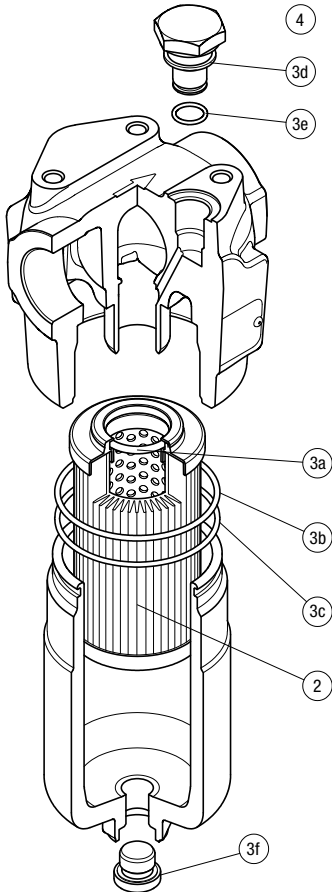
Order number for spare parts

FMM 050



Item:		Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	
		2	3 (3a ÷ 3g)	4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FMM 050	See order table	02050314	02050315	T2H	T2V

FMM 150



Item:		Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	
		2	3 (3a ÷ 3f)	4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FMM 150	See order table	02050731	02050732	T2H	T2V