

# FMP



# SERIES FMP

**Working pressure**

**280 bar**



Style S

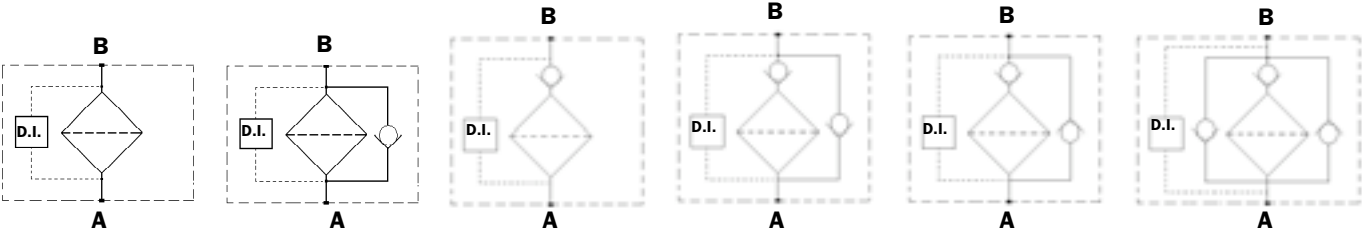
Style B

Style T

Style D

Style V

Style Z



# Technical data

## Filter body (Materials)

- Head: Cast iron (chemical heat treatment)
- Housing: Cast iron (chemical heat treatment)
- Bypass valve: Brass
- Reverse Flow : Steel (series 135 - 320 only)
- Check valve: Steel

## Pressure

- Maximum operating pressure: 280 bar (28 MPa)
- Test pressure: 420 bar (42 MPa)
- Burst pressure: 840 bar (84 MPa)
- Pulsed pressure fatigue test 1,000,000 cycles with pressure from 0 to 280 bar (28 MPa)

## Temperature

- From -25°C to + 110°C

## Bypass valve

- Opening pressure 6 bar ±10%
- Other opening pressures on request.

## Elements type Δp

- Microfibre elements series N - R : 20 bar
- Elements in stainless steel mesh series N : 20 bar
- Elements in microfibre series H - S : 210 bar
- Oil flow from exterior to interior.

## Seals

- Standard Nitrile (NBR) series A
- Optional FPM series V

## Weights without filter elements (kg)

Length	1	2	3	4
• FMP 065	3.0	3.4	5.2	—
• FMP 135	6,0	8,2	12,0	—
• FMP 320	12.7	14.7	20.7	23.7

## Filter internal volumes (dm³)

Length	1	2	3	4
• FMP 065	0.38	0.45	0.67	—
• FMP 135	0.40	1.02	1.24	—
• FMP 320	1.61	2.61	3.27	4.20

## Connections

In-line Inlet/Outlet

## Compatibility

- Bodies compatible with:  
Mineral oils to ISO 2943 - aqueous emulsions  
Synthetic fluids, water glycol.
- Filter elements compatible with:  
Mineral oils to ISO 2943 - aqueous emulsions  
Synthetic fluids, water glycol.
- Nitrile (NBR) seals series A, compatible with:  
Mineral oils to ISO 2943 - aqueous emulsions  
Synthetic fluids, water glycol.
- V series FPM seals, compatible with:  
Synthetic fluids type HS-HFDR-HFDS-HFDU.

## Filter Element Area

Filter element in stainless steel mesh

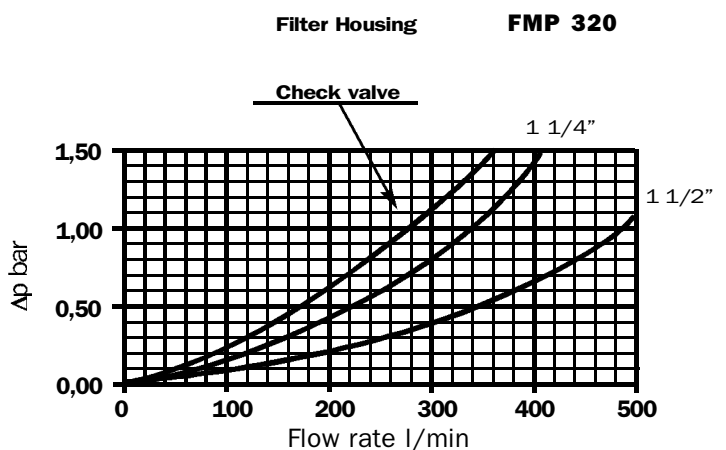
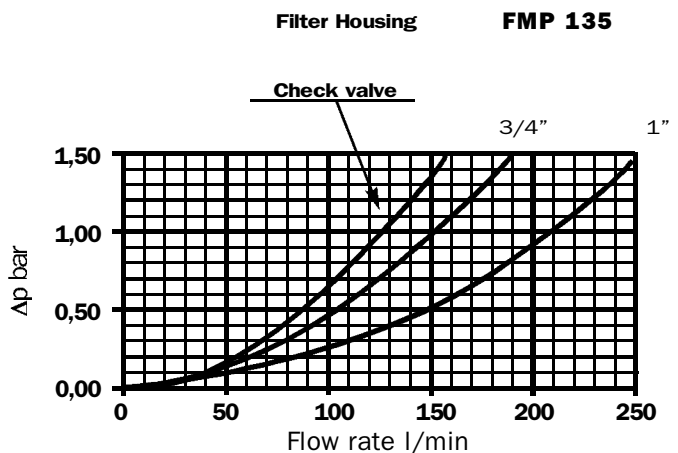
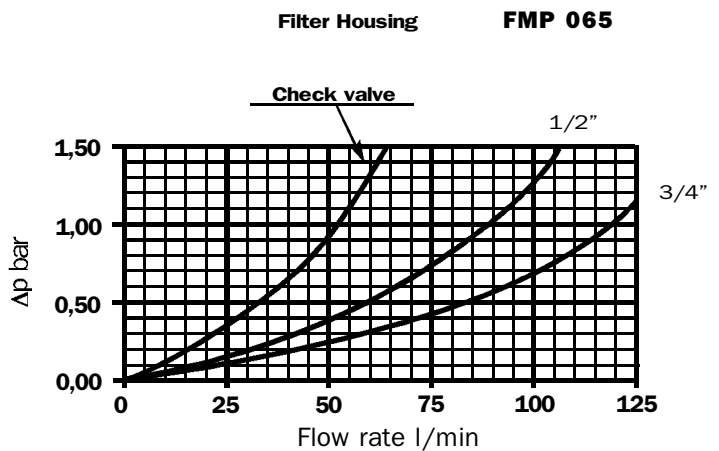
Type	Length			
	1	2	3	4
HP065	374	530	1064	-
HP135	950	2020	2700	-
HP320	1650	3645	5970	8280

Values expressed in **cm<sup>2</sup>**

## Pressure drops Δp Housing

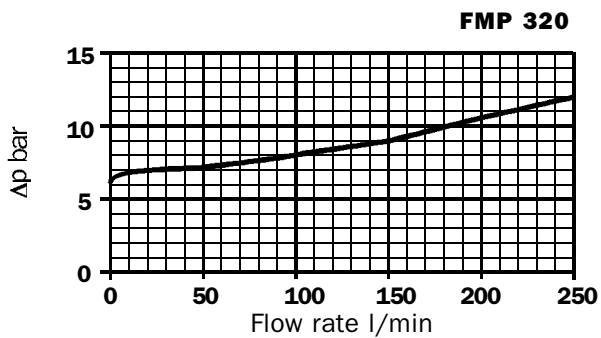
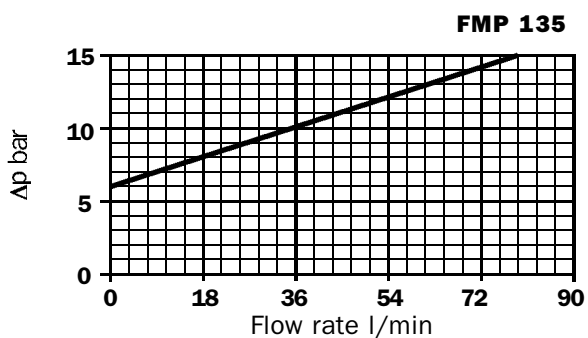
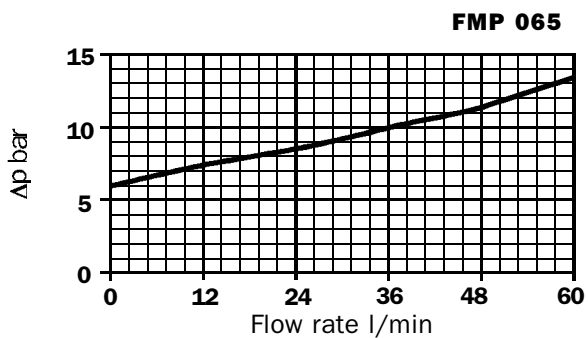
The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> to ISO 3968.

Δp varies proportional with density.

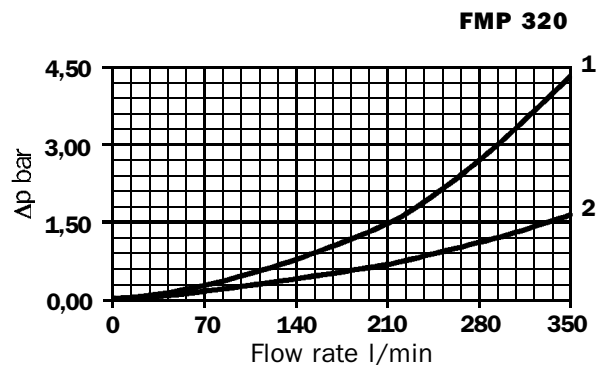


# Valves

## Bypass valve pressure drops



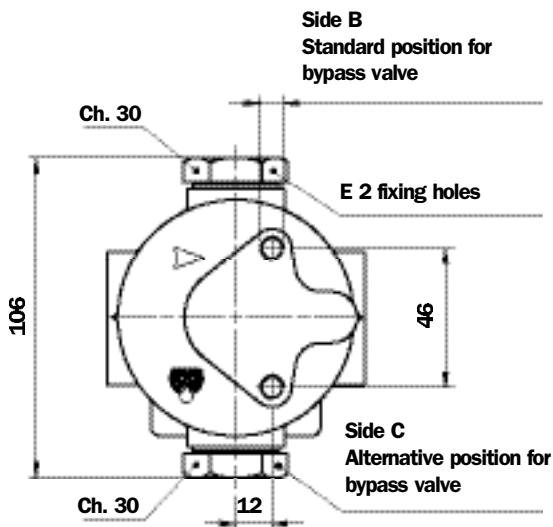
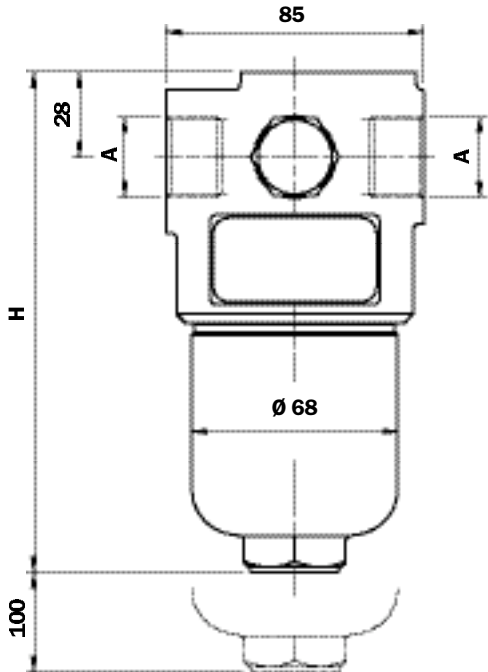
### Pressure drop in reverse flow valves



- 1 - Reverse Flow**
- 2 - In filter direction**

# Dimensions

## FMP 065



Indicator and bypass valve positions can be inverted.

### Recommended maximum flow rate

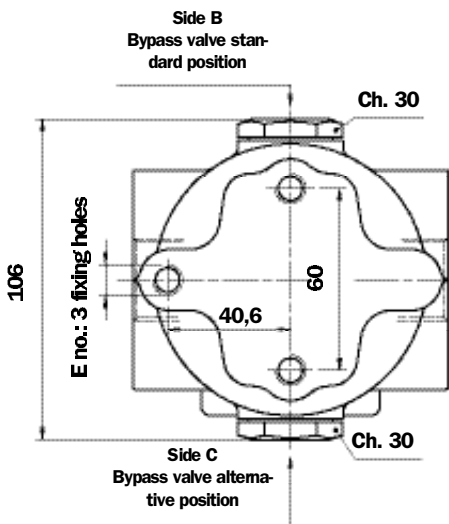
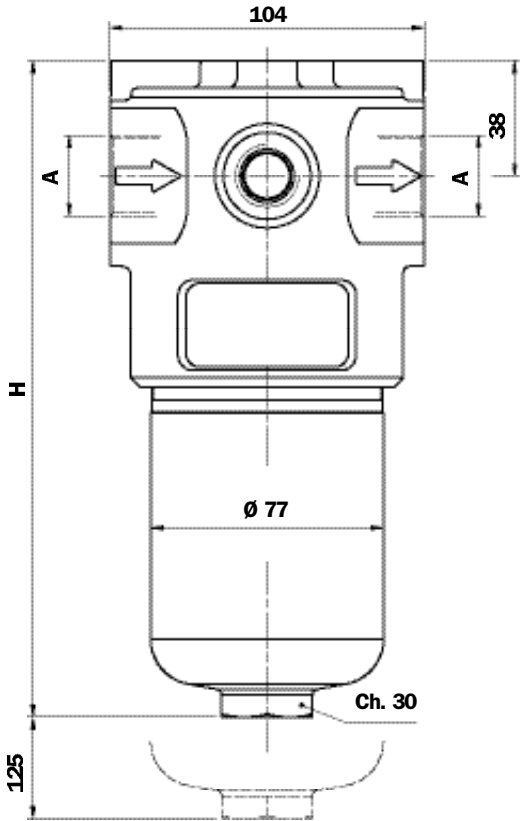
- Pressure drop of complete filter equal to  $\Delta p$  1.5 bar.
- Oil kinematic viscosity 30 mm<sup>2</sup>/s (cSt).
- Density 0.86 kg/dm<sup>3</sup>.
- Connections of filter under test G 3/4".

Filter element type	Flow rate l/min Series N	Flow rate l/min Series H	Filter Length
A03	23	22	1
A06	30	23	
A10	48	43	
A16	53	50	
A25	72	68	
M25	105	-	2
A03	31	30	
A06	45	35	
A10	60	57	
A16	64	63	
A25	82	77	3
M25	106	-	
A03	53	52	
A06	61	58	
A10	79	78	
A16	84	83	3
A25	94	93	
M25	108	-	

A Threaded Connections	E Depth 15 mm
G 1/2"	M8
1/2" NPT	5/16" UNC
G 3/4"	M8
3/4" NPT	5/16" UNC
SAE 8 (3/4" - 16 UNF)	5/16" UNC
SAE 12 (1 1/16" - 12 UN)	5/16" UNC

Filter Length	H mm
1	169
2	200
3	302

# FMP 135



Indicator and bypass valve positions can be inverted.

### Recommended maximum flow rate

- Pressure drop of complete filter equal to  $\Delta p$  1.5 bar.
- Oil kinematic viscosity 30 mm<sup>2</sup>/s (cSt).
- Density 0.86 kg/dm<sup>3</sup>.
- Connections of filter under test G 1".

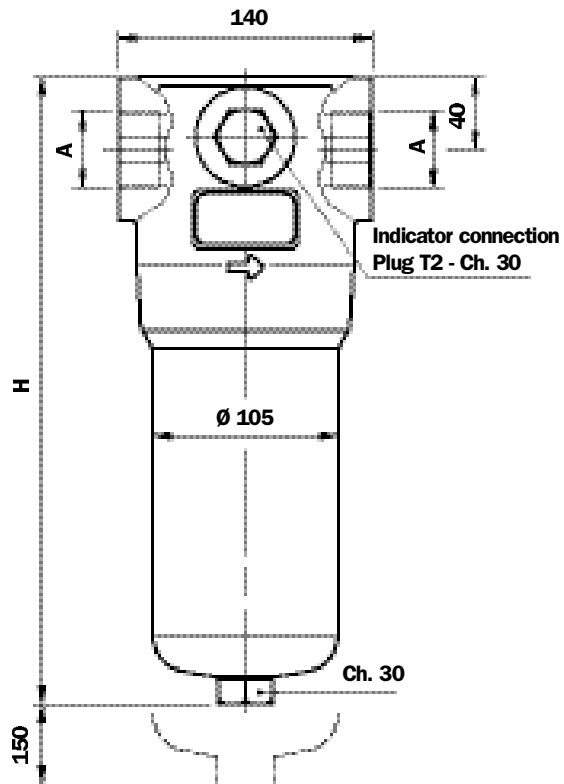
Filter element type	Flow rate l/min Series N	Flow rate l/min Series H	Filter Length
A03	69	50	1
A06	74	57	
A10	120	98	
A16	129	101	
A25	171	156	
M25	200	-	
A03	110	91	2
A06	117	110	
A10	148	136	
A16	151	139	
A25	208	175	
M25	230	-	
A03	150	126	3
A06	153	140	
A10	192	170	
A16	195	179	
A25	213	196	
M25	232	-	

A Threaded Connections	E Depth 15 mm
G 3/4"	M10
3/4" NPT	3/8" UNC
G 1"	M10
1" NPT	3/8" UNC
SAE 12 (1 1/16"- 12 UN)	3/8" UNC
SAE 16 (1 5/16"- 12 UN)	3/8" UNC

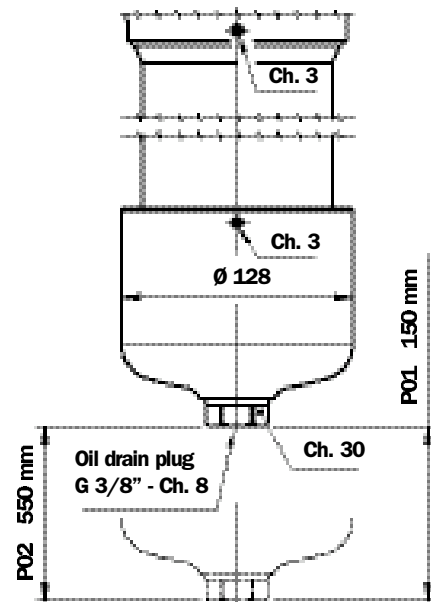
A Flanged Connections	B Depth 15 mm
3/4" SAE 3000 psi/M	M10
3/4" SAE 3000 psi/UNC	3/8" UNC
1" SAE 3000 psi/M	M10
1" SAE 3000 psi/UNC	3/8" UNC

Filter Length	H mm
1	220
2	333
3	408

# FMP 320

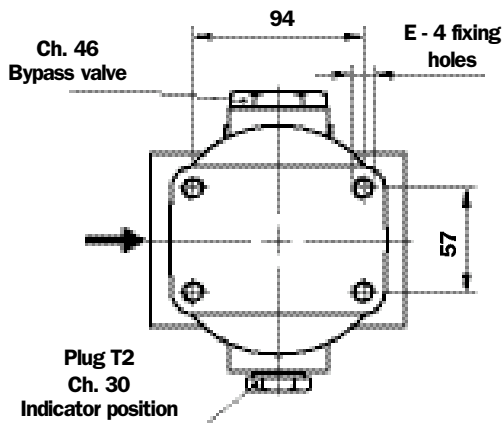


Only for FMP 320 length 4

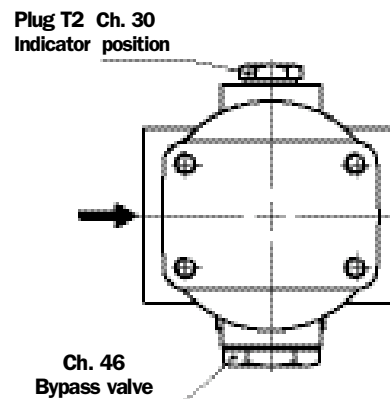


Style P01 standard maintenance from head.  
 Style P02 maintenance option from housing base.

Side B  
 Bypass valve standard  
 position



Side C  
 Bypass valve alternative  
 position



# FMP 320

## Recommended maximum flow rate

- Pressure drop of complete filter equal to  $\Delta p$  1.5 bar.
- Oil kinematic viscosity 30 mm<sup>2</sup>/s (cSt).
- Density 0.86 kg/dm<sup>3</sup>.
- Connections of filter under test G 1 1/2".

Filter element type	Flow rate l/min Series N	Flow rate l/min Series H	Filter Length
A03	126	107	1
A06	137	112	
A10	230	185	
A16	274	193	
A25	330	292	
M25	425	-	
A03	248	192	2
A06	270	220	
A10	376	300	
A16	395	312	
A25	440	378	
M25	445	-	
A03	319	255	3
A06	353	300	
A10	427	367	
A16	440	375	
A25	450	417	
M25	465	-	
A03	354	298	4
A06	375	320	
A10	430	375	
A16	447	382	
A25	467	422	
M25	475	-	

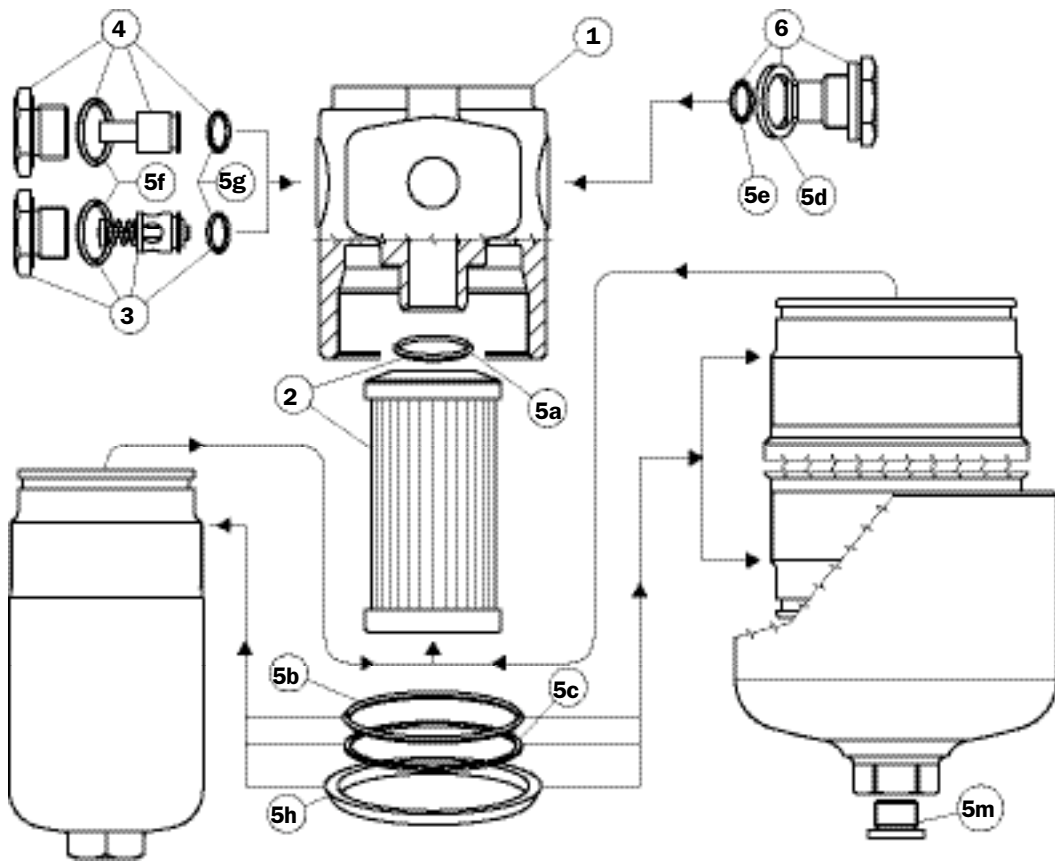
A Threaded Connections	E Depth 15 mm
G 1 1/4"	M12
1 1/4" NPT	1/2" UNC
G 1 1/2"	M12
1 1/2" NPT	1/2" UNC
SAE 20 (1 5/8" 12 UN)	1/2" UNC
SAE 24 (1 7/8" 12 UN)	1/2" UNC

A Flanged Connections	E Depth 15 mm
1 1/4" SAE 3000 psi/M	M12
1 1/4" SAE 3000 psi/UNC	1/2" UNC
1 1/2" SAE 3000 psi/M	M12
1 1/2" SAE 3000 psi/UNC	1/2" UNC

Filter Length	H mm
1	263
2	386
3	528
4	673



# Spare parts FMP



Pos.	Description	Qty.	FMP Series FILTER					
			065 1 - 2 - 3		135 1 - 2 - 3		320 1 - 2 - 3 - 4	
1	Complete filter	1	See order table					
2	Filter element	1	See order table					
3	Bypass assembly	1	02001312 (NBR) 02001385 (FPM)		02001396 (NBR) 02001397 (FPM)			
4	No bypass assembly	1	02001314 (NBR) 02001386 (FPM)		02001398 (NBR) 02001399 (FPM)			
5	Seals kit	1	NBR 02050267	FPM 02050278	NBR 02050293	FPM 02050294	NBR 02050274	FPM 02050285
5a	Filter element O-Ring	1	OR 4100 Ø 24.99 x 3.53		OR 3106 Ø 26.65 x 2.62		OR 144 Ø 39.69 x 3.53	
5b	O-Ring for housing	1	OR 159 Ø 55.56 x 3.53		OR 3256 Ø 64.77 x 2.62		2 pcs.	OR 3350 Ø 88.57 x 2.62
5c	Anti-extrusion ring	1	Parbak 227 Ø 54.53 x 3		Parbak 144 Ø 63.96 x 2.18		2 pcs.	Parbak 153 Ø 89.36 x 2.18
5d	Bonded seal	1	G 1/2" - FPM					
5e	O-Ring	1	O-R 2050 Øi 12.42 x 1.78 - FPM					
5f	Bp or No Bp O-Ring	1	Bonded seal G 1/2" - FPM		Bonded seal G 1/2" - FPM		O-R 3143 (NBR 90 Sh A) Øi 36,14 x 2,62	
5g	Bp or No Bp O-Ring	1	OR 2050 Ø 12.42 x 1.78		OR 2050 Ø 12.42 x 1.78		OR 3106 Ø 26,65 x 2,62	
5h	Protective seal	1	01026521		01026509		01026510	
5m	Oil drain plug	1	-		-		G 3/8" with bonded seal	
-	Indicators	1	See order table					
6	Indicator connection plug	1	T2					

# Ordering information FMP

## Filter assembly FMP

Example: FMP

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8 a</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>065</b>	<b>2</b>	<b>B</b>	<b>A</b>	<b>G1</b>	<b>A03</b>	<b>N</b>	<b>P01</b>

## Filter element HP

Example: HP

<b>1</b>	<b>2</b>	<b>6</b>	<b>4</b>	<b>7</b>	<b>8 b</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>065</b>	<b>2</b>	<b>A03</b>	<b>A</b>	<b>N</b>	<b>P01</b>

### 1 - Size

- 065
- 135
- 320

### 2 - Filter length

- 1
- 2
- 3
- 4

(only for FMP 320)

### 3 - Valves

- S
- B
- C
- D
- V
- Z
- T

Without bypass

With bypass side B - Optional

With bypass side C - Optional

With bypass side B + check valve\*

With Reverse Flow\* (Only for size 320)

With Reverse Flow + bypass\* (Only for size 320)

Without bypass + check valve\*

\*Reduced cross-section oilways

### 4 - Seals

- A
- V

NBR

FPM

### 5 - Connections

Type	065	135	320
<b>G1</b>	G 1/2"	G 3/4"	G 1 1/4"
<b>G2</b>	G 3/4"	G 1"	G 1 1/2"
<b>G3</b>	1/2" NPT	3/4" NPT	1 1/4" NPT
<b>G4</b>	3/4" NPT	1" NPT	1 1/2" NPT
<b>G5</b>	SAE 8 (3/4" 16 UNF)	SAE 12 (1 - 1/16" 12 UN)	SAE 20 (1 5/8" 12 UN)
<b>G6</b>	SAE 12 (1 - 1/16" 12 UN)	SAE 16 (1 - 5/16" 12 UN)	SAE 24 (1 7/8" 12 UN)
<b>F1</b>	-	3/4" SAE 3000 PSI/M	1 - 1/4" SAE 3000 PSI/M
<b>F2</b>	-	1" SAE 3000 PSI/M	1 - 1/2" SAE 3000 PSI/M
<b>F3</b>	-	3/4" SAE 3000 PSI/UNC	1 - 1/4" SAE 3000 PSI/UNC
<b>F4</b>	-	1" SAE 3000 PSI/UNC	1 - 1/2" SAE 3000 PSI/UNC

DIFFERENTIAL INDICATORS  
(see page 15)

### 6 - Filter elements

- A03
- A06
- A10
- A16
- A25
- M25

Inorganic microfibre 3 µ

Inorganic microfibre 6 µ

Inorganic microfibre 10 µ

Inorganic microfibre 16 µ

Inorganic microfibre 25 µ

Stainless steel mesh 25 µ (style N only)

βx (c) ≥ 1000  
See page 9

### 7 - Filter elements collapse pressure

- N
- H
- R
- S

20 bar

210 bar

20 bar (Filter with reverse flow + bypass)

210 bar (Filter with reverse flow)

### 8 - Options

#### a) Filter

- P01
- P02
- Pxx

MP Standard filters

Maintenance from housing base (only for FMP 320 - 4)

Customer request

#### b) Filter element

- P01
- Pxx

MP Filtri standard

Customer request

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