

# FMP 039

**Maximum pressure 110 bar**  
**Flow rates to 80 l/min**



## Technical data

### Filter housing (Materials)

- Head: Anodized aluminium
- Housing: Anodized aluminium
- Bypass valve: Steel

### Pressure

- Working pressure: 110 bar (11 MPa)
- Test pressure: 170 bar (17 MPa)
- Burst pressure: 330 bar (33 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 110 bar (11 MPa)

### Temperature

- From -25 °C to +110 °C

### Bypass valve

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

### $\Delta p$ Elements type

- Microfibre filter elements series N: 20 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

### FMP 039 FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

#### Weights (kg)

Length	2	3	4
• FMP 039	0,60	0,70	0,80

#### Volumes (dm<sup>3</sup>)

Length	2	3	4
• FMP 039	0,19	0,26	0,34

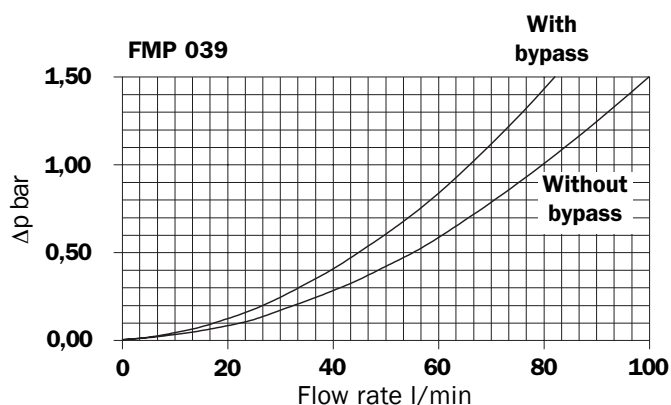
### Connections

- FMP 039: In-line Inlet/Outlet

### Filter housings $\Delta p$ pressure drop

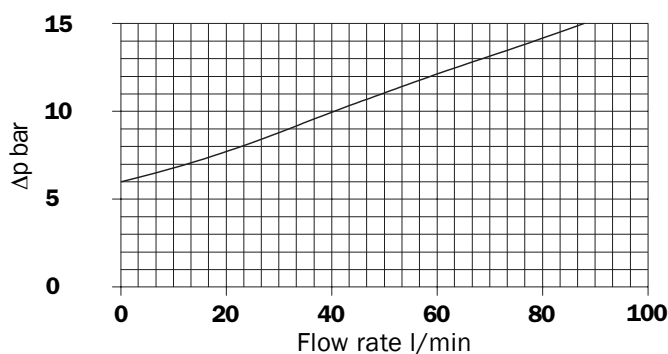
The curves are plotted utilising mineral oil with density of 0.86 kg/dm<sup>3</sup> to ISO 3968.

$\Delta p$  varies proportionally with density.



### Valves

#### Bypass valve pressure drop



### Recommended maximum flow rate

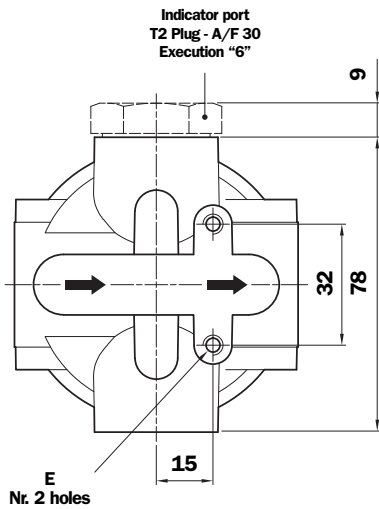
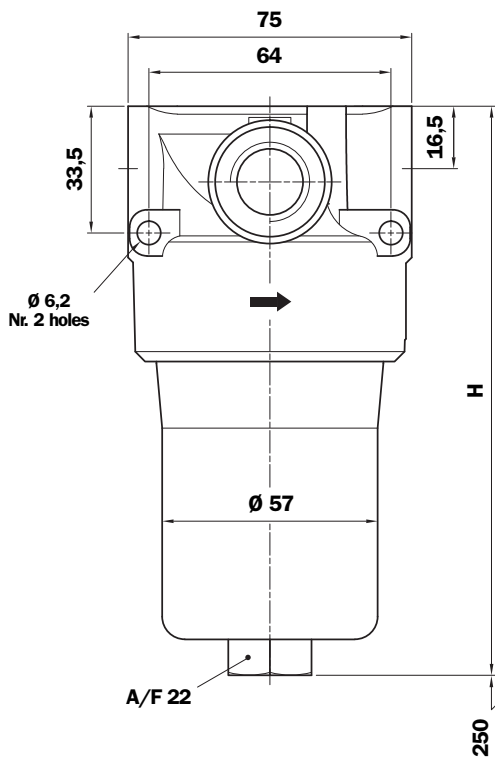
- Pressure drop of filter assembly equal to  $\Delta p$  1,5 bar.
- Oil kinematic viscosity 30 mm<sup>2</sup>/s (cSt).
- Density 0,86 kg/dm<sup>3</sup>.
- Connections of filter under test G 1/2".

### Filtration

	Length	A03	A06	A10	A16	A25	M25
<b>FMP 039</b>	2	18	23	39	44	52	72
	3	30	33	48	54	64	77
	4	38	42	56	61	70	80

Series N - Flow rate l/min

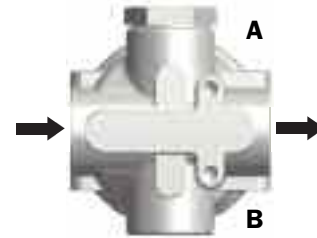
# FMP 039



## Execution 1: Without indicator connection



## Execution 6: Double indicator connection (A - B)

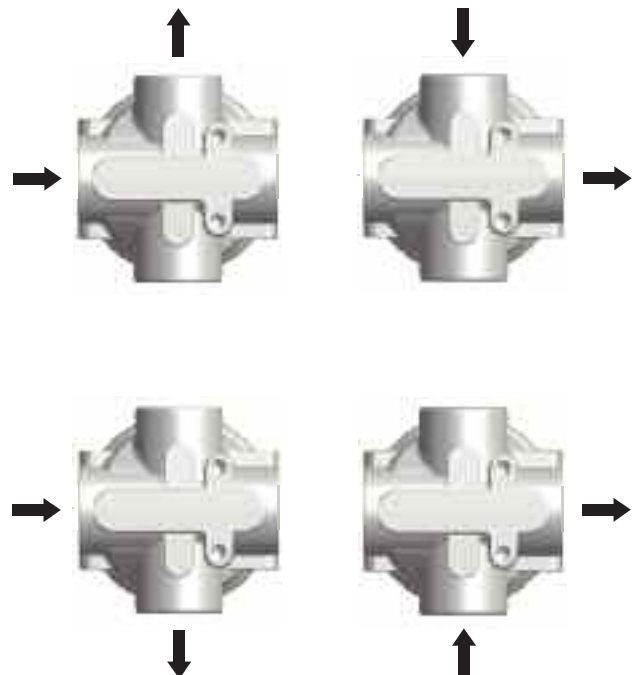


**A:**  
Closure cap with standard T2 steel.  
The position of the cap is reversible.

**B:**  
Standard closure cap with plastic  
thread protection.

If necessary, the second plug T2,  
see page 15 ordering information.

## Special connections on request



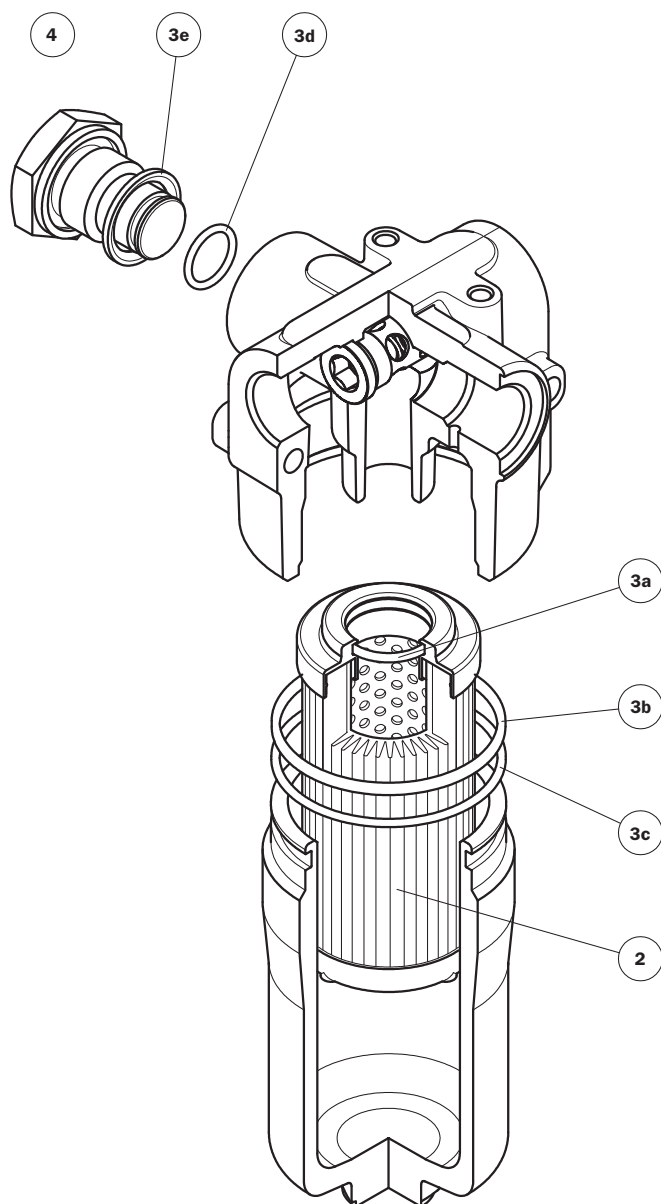
### FMP 039

Length Filter	H mm
2	151
3	194
4	238

### Thread connections

Type	Size	E Depth 6 mm
A	G 1/2"	M6
B	1/2" NPT	1/4" UNC
C	SAE 8 - 3/4" - 16 UNF	1/4" UNC

# Spare parts



Item	Description	Q.ty	FILTER Series FMP 039	
<b>1</b>	Filter assembly	1	See order table	
<b>2</b>	Filter element	1	See order table	
<b>3</b>	Seal Kit	1	NBR 02050509	FPM 02050510
<b>3a</b>	O-Ring for filter element	1	O-R 4087 Ø 21,82 x 3,53	
<b>3b</b>	O-Ring for housing	1	O-R 3200 Ø 50,47 x 2,62	
<b>3c</b>	Anti-extrusion ring	1	Parbak 136 Ø 51,26 x 2,18	
<b>3d</b>	O-Ring indicator	2	O-R 2050 Ø 12,42 x 1,78	
<b>3e</b>	Seal	2	01030058 (HNBR)	01030046 (FPM)
<b>4</b>	Indicator connection plug	1	T2H	T2V

# Ordering information FMP 039

## Filter assembly FMP

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</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"/>	<input type="checkbox"/>
<b>Example: FMP</b>	<b>039</b>	<b>2</b>	<b>B</b>	<b>A</b>	<b>A</b>	<b>1</b>	<b>A10</b>	<b>N</b>	<b>P01</b>

## Filter element HP

	<b>1</b>	<b>2</b>	<b>7</b>	<b>4</b>	<b>8</b>	<b>9</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Example: HP</b>	<b>039</b>	<b>2</b>	<b>A10</b>	<b>A</b>	<b>N</b>	<b>P01</b>

### 1 - Style

<b>Filter</b>	<b>Filter element</b>
<input type="checkbox"/> <b>039</b>	<input type="checkbox"/> <b>039</b>

### 2 - Filter length

<input type="checkbox"/> <b>039</b>	<input type="checkbox"/> <b>2</b>	<input type="checkbox"/> <b>3</b>	<input type="checkbox"/> <b>4</b>
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### 3 - Valves

<input type="checkbox"/> <b>S</b>	Without bypass
<input type="checkbox"/> <b>B</b>	With bypass

### 4 - Filter seals

<input type="checkbox"/> <b>A</b>	NBR
<input type="checkbox"/> <b>V</b>	FPM
<input type="checkbox"/>	On request

### 5 - Connections

#### Threaded

#### FMP 039

Type	Size
<b>A</b>	G 1/2"
<b>B</b>	1/2" NPT
<b>C</b>	SAE 8 - 3/4" - 16 UNF

### 6 - Indicator port

<input type="checkbox"/> <b>1</b>	Without indicator port
<input type="checkbox"/> <b>6</b>	With 2 indicators port*

### 7 - Filter element

<input type="checkbox"/> <b>A03</b>	Inorganic microfibre 3 $\mu$	Absolute filtration Inorganic Microfibre $\beta_x(c) \geq 1000$
<input type="checkbox"/> <b>A06</b>	Inorganic microfibre 6 $\mu$	
<input type="checkbox"/> <b>A10</b>	Inorganic microfibre 10 $\mu$	
<input type="checkbox"/> <b>A16</b>	Inorganic microfibre 16 $\mu$	
<input type="checkbox"/> <b>A25</b>	Inorganic microfibre 25 $\mu$	Nominal Filtration Metal mesh
<input type="checkbox"/> <b>M25</b>	Wire mesh 25 $\mu$	

### 8 - Max filter element differential pressure

<input type="checkbox"/> <b>N</b>	$\Delta p$ 20 bar
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### 9 - Option

<input type="checkbox"/> <b>P01</b>	MP Filtri standard
<input type="checkbox"/> <b>Pxx</b>	On request

#### \* Indicator plug:

Phosphated Steel plug T2 has to be ordered separately.

#### Code

<input type="checkbox"/> <b>T2H</b>	Seal NBR
<input type="checkbox"/> <b>T2V</b>	Seal FPM

# FMP

**Maximum pressure 320 bar**  
**Flow rates to 475 l/min**



## Technical data

### Filter housing (Materials)

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

### Pressure

- Working pressure: 320 bar (32 MPa)
- Test pressure: 480 bar (48 MPa)
- Burst pressure: 960 bar (96 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 320 bar (32 MPa)

### Temperature

- From -25 °C to +110 °C

### Bypass valve

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

### $\Delta p$ Elements type

- Microfibre filter elements series N-R: 20 bar
- Microfibre filter elements series H-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

### FMP FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

### Weights (kg)

Length	1	2	3	4
• FMP065	3.26	3.62	4.83	-
• FMP135	5.61	7.21	8.27	-
• FMP320	10.95	13.08	15.37	17.85

### Volumes (dm<sup>3</sup>)

Length	1	2	3	4
• FMP065	0.36	0.47	0.84	-
• FMP135	0.45	0.78	1.00	-
• FMP320	1.03	1.75	2.52	3.35

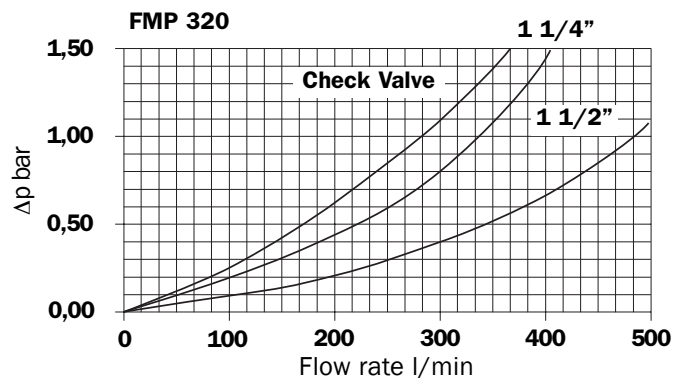
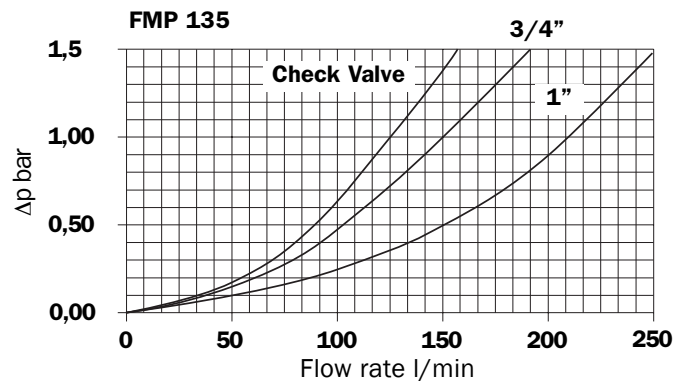
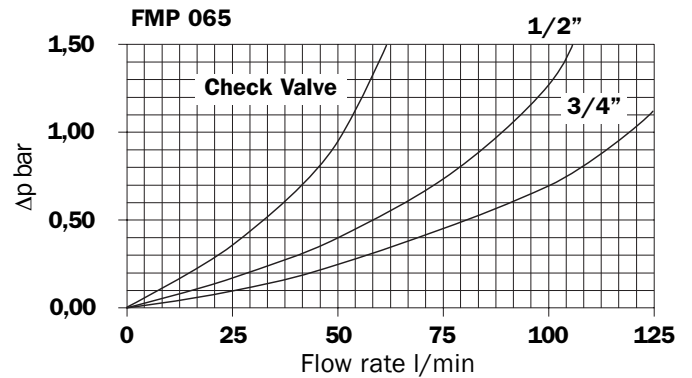
### Connections

- FMP: In-line Inlet/Outlet

### Filter housings $\Delta p$ pressure drop

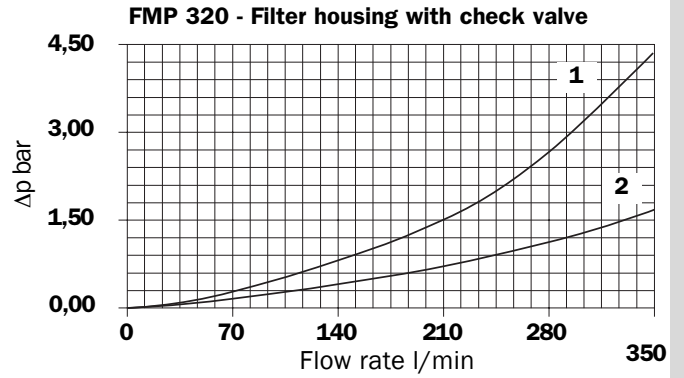
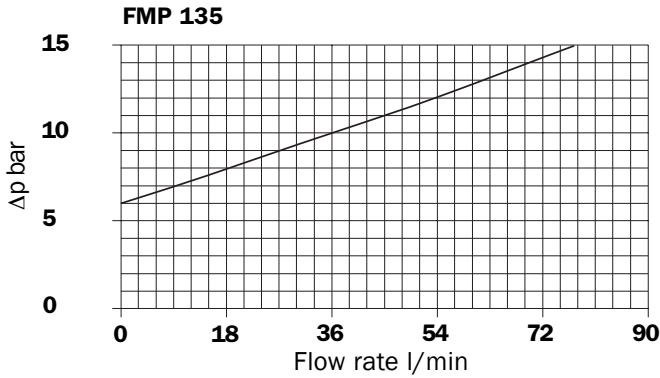
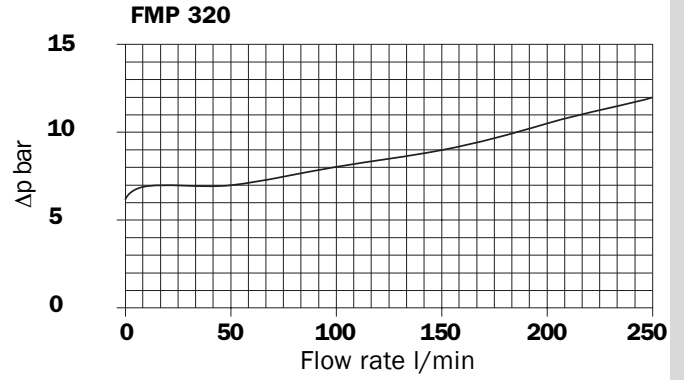
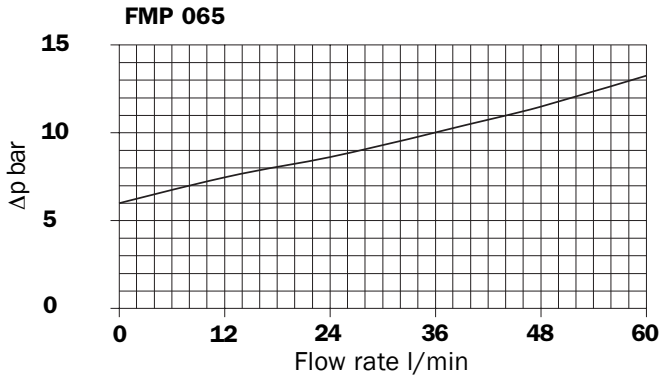
The curves are plotted utilising mineral oil with density of 0.86 kg/dm<sup>3</sup> to ISO 3968.

$\Delta p$  varies proportionally with density.



**Valves**

**Bypass valve pressure drop**



1 - Reverse flow  
2 - In filter direction

**Recommended maximum flow rate**

- Pressure drop of filter assembly 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".

**Filtration**

	Length	A03	A06	A10	A16	A25	M25
<b>FMP 065</b>	1	23	30	48	53	72	105
	2	31	45	60	64	85	106
	3	53	61	79	84	94	108

**Serie N - Flow rate l/min**

**Filtration**

	Length	A03	A06	A10	A16	A25	M25
<b>FMP 135</b>	1	66	74	112	120	157	180
	2	104	110	138	141	185	205
	3	138	141	170	178	190	208

**Serie N - Flow rate l/min**

**Filtration**

	Length	A03	A06	A10	A16	A25	M25
<b>FMP 320</b>	1	126	137	230	280	300	440
	2	240	250	376	390	400	445
	3	300	330	427	440	450	460
	4	350	370	430	447	467	475

**Serie N - Flow rate l/min**

**Filtration**

	Length	A03	A06	A10	A16	A25
<b>FMP 065</b>	1	22	23	43	50	68
	2	30	35	57	68	77
	3	52	58	78	83	93

**Serie H - Flow rate l/min**

**Filtration**

	Length	A03	A06	A10	A16	A25
<b>FMP 135</b>	1	48	55	93	96	145
	2	87	104	127	129	160
	3	118	130	155	165	178

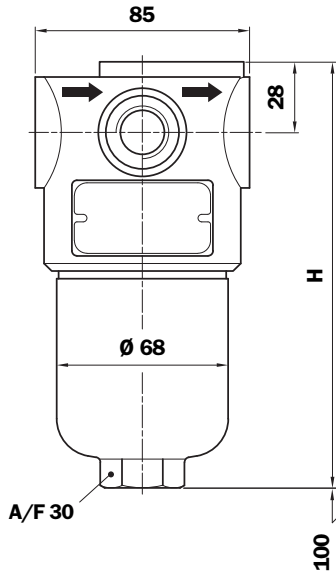
**Serie H - Flow rate l/min**

**Filtration**

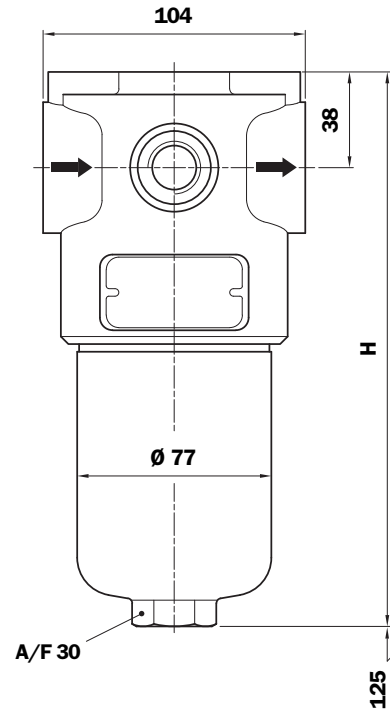
	Length	A03	A06	A10	A16	A25
<b>FMP 320</b>	1	107	112	185	193	250
	2	192	200	300	312	378
	3	255	300	367	375	417
	4	298	320	375	400	450

**Serie H - Flow rate l/min**

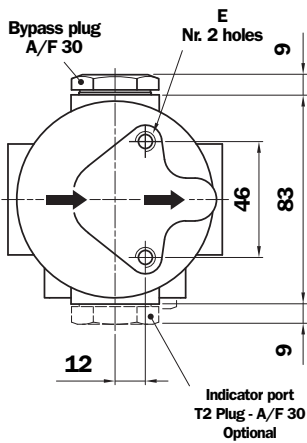
# FMP 065



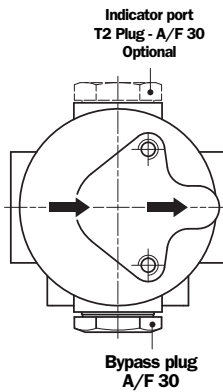
# FMP 135



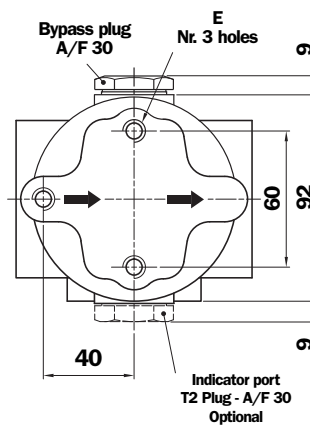
**Standard  
Bypass side B**



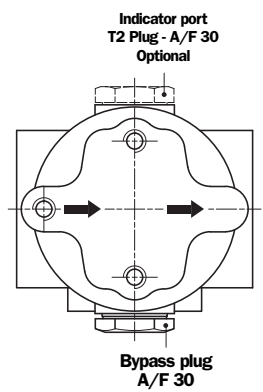
**Optional  
Bypass side C**



**Standard  
Indicator port side B**



**Optional  
Indicator port side C**



## FMP 065

Length Filter	H mm
1	169
2	200
3	302

## FMP 135

Length Filter	H mm
1	221
2	334
3	409

## FMP 065 - 135:

Indicator and bypass valve positions can be inverted.

## FMP 065 - Thread connections

Type	Size	E Depth 15 mm
G1	G 1/2"	M8
G2	G 3/4"	M8
G3	1/2" NPT	5/16" UNC
G4	3/4" NPT	5/16" UNC
G5	SAE 8 - 3/4" - 16 UNF	5/16" UNC
G6	SAE 12 - 1 1/16" - 12 UN	5/16" UNC

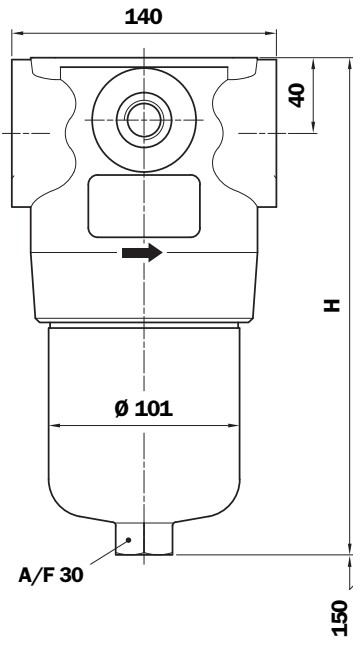
## FMP 135 - Thread connections

Type	Size	E Depth 10 mm
G1	G 3/4"	M10
G2	G 1"	M10
G3	3/4" NPT	3/8" UNC
G4	1" NPT	3/8" UNC
G5	SAE 12 - 1 1/16" - 12 UN	3/8" UNC
G6	SAE 16 - 1 5/16" - 12 UN	3/8" UNC

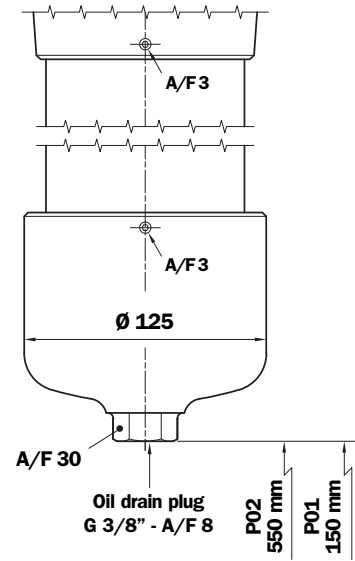
## FMP 135 - Flange connections

Type	Size	E Depth 10 mm
F1	3/4" SAE 3000 psi/M	M10
F2	1" SAE 3000 psi/M	M10
F3	3/4" SAE 3000 psi/UNC	3/8" UNC
F4	1" SAE 3000 psi/UNC	3/8" UNC

# FMP 320



FMP 320 length 4



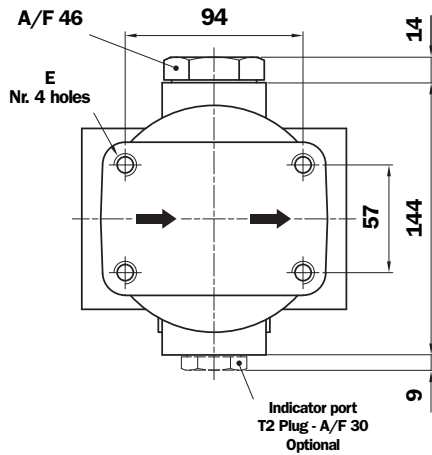
Style P01

Standard maintenance from head.

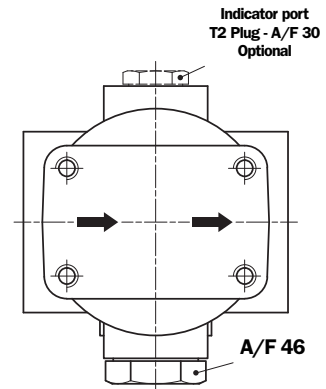
Style P02

Maintenance option from housing base.

Standard - Bypass side B



Optional - Bypass side C



## FMP 320

Length Filter	H mm
1	263
2	386
3	518
4	671

## Thread connections

Type	Size	E Depth 15 mm
G1	G 1 1/4"	M12
G2	G 1 1/2"	M12
G3	1 1/4" NPT	1/2" UNC
G4	1 1/2" NPT	1/2" UNC
G5	SAE 20 - 1 5/8" - 12 UN	1/2" UNC
G6	SAE 24 - 1 7/8" - 12 UN	1/2" UNC

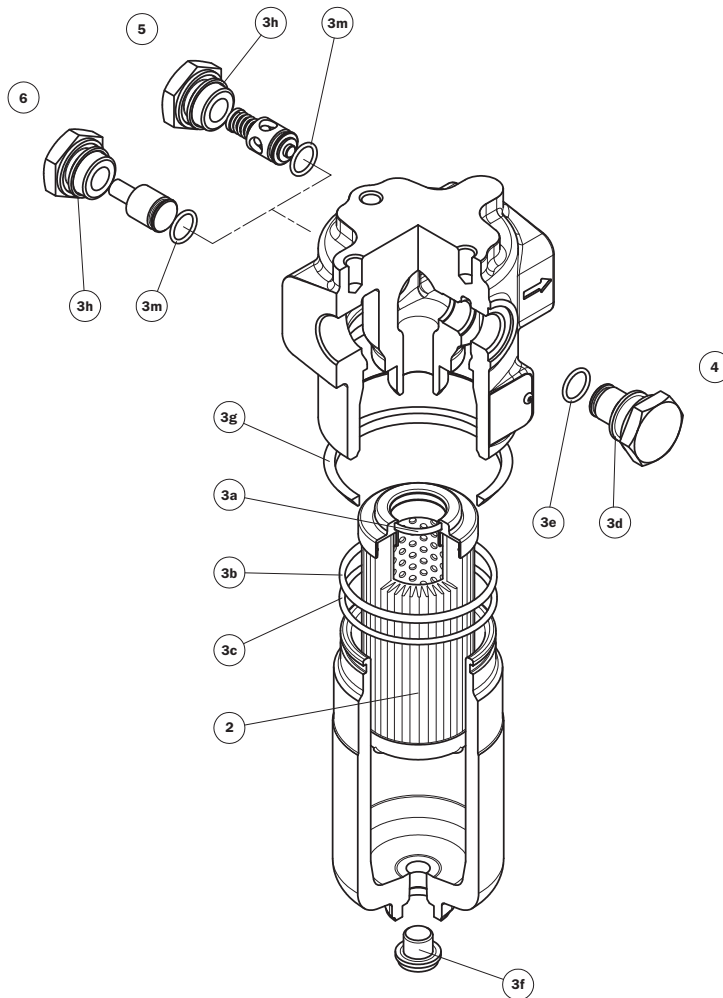
## Flange connections

Type	Size	E Depth 15 mm
F1	1 1/4" SAE 3000 psi/M	M12
F2	1 1/2" SAE 3000 psi/M	M12
F3	1 1/4" SAE 3000 psi/UNC	1/2" UNC
F4	1 1/2" SAE 3000 psi/UNC	1/2" UNC

N.B.: 2" SAE 3000 see page 33 filter assembly FHP 500



# Spare parts



Item	Description	Q.ty	FILTER Series					
			FMP 065		FMP 135		FMP 320	
1	Filter assembly	1	See order table					
2	Filter element	1	See order table					
3	Seal Kit	1	NBR 02050267	FPM 02050278	NBR 02050293	FPM 02050294	NBR 02050274	FPM 02050285
3a	Filter element seal	1	O-R 4100 Ø 24,99 x 3,53		O-R 3106 Ø 26,65 x 2,62		O-R 144 Ø 39,69 x 3,53	
3b	Bowl seal	1	O-R 159 Ø 55,56 x 3,53		O-R 3256 Ø 64,77 x 2,62		2 pcs	O-R 3350 Ø 88,57 x 2,62
3c	Bowl 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
3d	Gasket	1	01030058 (HNBR)	01030046 (FPM)	01030058 (HNBR)	01030046 (FPM)	01030058 (HNBR)	01030046 (FPM)
3e	O-Ring indicator	1	O-R 2050 Ø 12,42 x 1,78		O-R 2050 Ø 12,42 x 1,78		O-R 2050 Ø 12,42 x 1,78	
3f	Drain plug	2	-		-		G 3/8" with bonded seal	
3g	Protective seal	1	01026521		01026509		01026510	
3h	Bp or Non-Bp seal	1	Bonded seal G 1/2"		Bonded seal G 1/2"		O-R 3143 (90 Sh A) Ø 36,14 x 2,62	
3m	Bp or Non-Bp seal	1	O-R 2050 Ø 12,42 x 1,78		O-R 2050 Ø 12,42 x 1,78		O-R 3106 Ø 26,65 x 2,62	
4	Indicator connection plug	1	T2H	T2V	T2H	T2V	T2H	T2V
5	Bypass assembly	1	02001312	02001385	02001312	02001385	02001396	02001397
6	Non-bypass assmby	1	02001314	02001386	02001314	02001386	02001398	02001399

# Ordering information FMP

## Filter assembly FMP

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8a</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>Example: FMP</b>	<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

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

### 1 - Style

Filter	Filter element
<input type="checkbox"/> <b>065</b>	<input type="checkbox"/> <b>065</b>
<input type="checkbox"/> <b>135</b>	<input type="checkbox"/> <b>135</b>
<input type="checkbox"/> <b>320</b>	<input type="checkbox"/> <b>320</b>

### 2 - Filter length

<input type="checkbox"/> <b>065</b>	<input type="checkbox"/> <b>1</b>	<input type="checkbox"/> <b>2</b>	<input type="checkbox"/> <b>3</b>
<input type="checkbox"/> <b>135</b>	<input type="checkbox"/> <b>1</b>	<input type="checkbox"/> <b>2</b>	<input type="checkbox"/> <b>3</b>
<input type="checkbox"/> <b>320</b>	<input type="checkbox"/> <b>1</b>	<input type="checkbox"/> <b>2</b>	<input type="checkbox"/> <b>3</b>
			<input type="checkbox"/> <b>4</b>

### 3 - Valves

<input type="checkbox"/> <b>S</b>	Without bypass side B - Optional
<input type="checkbox"/> <b>B</b>	With bypass side B - Standard
<input type="checkbox"/> <b>C</b>	With bypass side C - Optional
<input type="checkbox"/> <b>E</b>	Without bypass side C - Optional
<input type="checkbox"/> <b>T</b>	Without bypass + check valve*
<input type="checkbox"/> <b>D</b>	With bypass side B + check valve*

\*Reduced cross-section oilways

### 4 - Filter seals

<input type="checkbox"/> <b>A</b>	NBR
<input type="checkbox"/> <b>V</b>	FPM
<input type="checkbox"/>	On request

### 5 - Connections

#### Threaded

##### FMP 065

Type	Size
<b>G1</b>	G 1/2"
<b>G2</b>	G 3/4"
<b>G3</b>	1/2" NPT
<b>G4</b>	3/4" NPT
<b>G5</b>	SAE 8 - 3/4" - 16 UNF
<b>G6</b>	SAE 12 - 1 1/16" - 12 UN

##### FMP 135

Type	Size
<b>G1</b>	G 3/4"
<b>G2</b>	G 1"
<b>G3</b>	3/4" NPT
<b>G4</b>	1" NPT
<b>G5</b>	SAE 12 - 1 1/16" - 12 UN
<b>G6</b>	SAE 16 - 1.5/16" - 12 UN

##### FMP 320

Type	Size
<b>G1</b>	G 1 1/4"
<b>G2</b>	G 1 1/2"
<b>G3</b>	1 1/4" NPT
<b>G4</b>	1 1/2" NPT
<b>G5</b>	SAE 20 - 1.5/8" - 12 UN
<b>G6</b>	SAE 24 - 1 7/8" - 12 UN

#### Flanged

##### FMP 135

Type	Size
<b>F1</b>	3/4" SAE 3000 psi/M
<b>F2</b>	1" SAE 3000 psi/M
<b>F3</b>	3/4" SAE 3000 psi/UNC
<b>F4</b>	1" SAE 3000 psi/UNC

##### FMP 320

Type	Size
<b>F1</b>	1 1/4" SAE 3000 psi/M
<b>F2</b>	1 1/2" SAE 3000 psi/M
<b>F3</b>	1 1/4" SAE 3000 psi/UNC
<b>F4</b>	1 1/2" SAE 3000 psi/UNC

N.B.: 2" SAE 3000 see page 33 filter assembly FHP 500

### 6 - Filter element

<input type="checkbox"/> <b>A03</b>	Inorganic microfibre 3 μ	Absolute filtration Inorganic Microfibre βx (c) ≥ 1000
<input type="checkbox"/> <b>A06</b>	Inorganic microfibre 6 μ	
<input type="checkbox"/> <b>A10</b>	Inorganic microfibre 10 μ	
<input type="checkbox"/> <b>A16</b>	Inorganic microfibre 16 μ	
<input type="checkbox"/> <b>A25</b>	Inorganic microfibre 25 μ	
<input type="checkbox"/> <b>M25</b>	Wire mesh 25 μ	Nominal Filtration Metal mesh

### 7 - Max filter element differential pressure

<input type="checkbox"/> <b>N</b>	Δp 20 bar
<input type="checkbox"/> <b>R</b>	Δp 20 bar (filter with reverse flow + bypass)
<input type="checkbox"/> <b>H</b>	Δp 210 bar
<input type="checkbox"/> <b>S</b>	Δp 210 bar (filter with reverse flow)

### 8 - Option

#### a - Filter

<input type="checkbox"/> <b>P01</b>	MP Filtri standard
<input type="checkbox"/> <b>P02</b>	Maintenance from housing base (only for FMP 320 - 4)
<input type="checkbox"/> <b>Pxx</b>	Customer request

#### b - Filter element

<input type="checkbox"/> <b>P01</b>	MP Filtri standard
<input type="checkbox"/> <b>Pxx</b>	Customer request

#### \* Indicator plug:

Steel plug T2 has to be ordered separately.

#### Code

<input type="checkbox"/> <b>T2H</b>	Seal NBR
<input type="checkbox"/> <b>T2V</b>	Seal FPM

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