

FHP

Maximum pressure 420 bar
Flow rates to 750 l/min



Technical data

Filter housing (Materials)

- Head: Cast iron (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: AISI 316L (FHP 010 - 011)
 Brass (FHP 065 - 135 - 320)
 Steel (FHP 500)
- Reverse Flow: Steel (FHP 320 - FHP 500)
- Check valve: Steel

Pressure

- Working pressure: 420 bar (42 MPa)
- Test pressure: 630 bar (63 MPa)
- Burst pressure: 1260 bar (126 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 420 bar (42 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

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

FHP Δp Elements type

- Microfibre filter elements series N: 20 bar
- Microfibre filter elements series R*: 20 bar
 *Excluded FHP 010-011 and FHP 500
- Microfibre filter elements series H: 210 bar
- Microfibre filter elements series S: 210 bar (FHP 500)
- 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

FHP FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

Weights (kg)

Length	1	2	3	4	5
• FHP010	2,05	2,18	2,64	3,13	-
• FHP065	4,26	4,62	5,83	-	-
• FHP135	7,11	8,71	9,76	-	-
• FHP320	13,95	16,08	18,37	20,85	-
• FHP500	27	31,17	34,69	46,7	52,5

Volumes (dm³)

Length	1	2	3	4	5
• FHP010	0,10	0,12	0,15	0,20	-
• FHP065	0,25	0,30	0,50	-	-
• FHP135	0,43	0,76	0,97	-	-
• FHP320	1,00	1,72	2,49	3,32	-
• FHP500	1,71	2,43	3,04	5,18	6,51

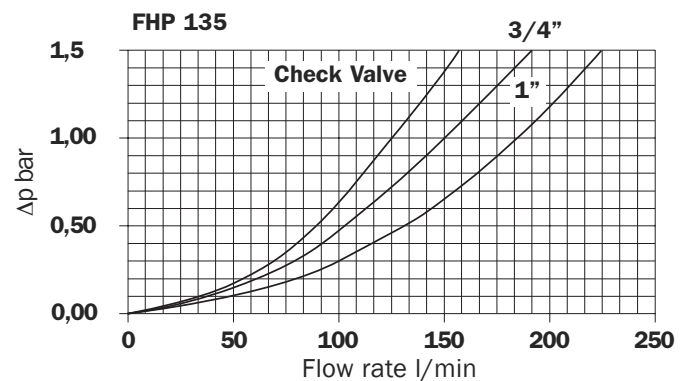
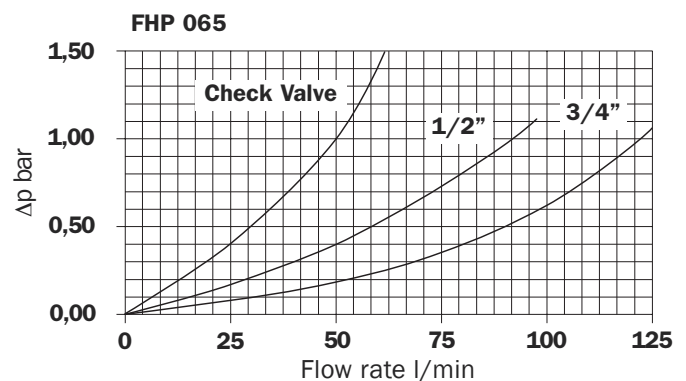
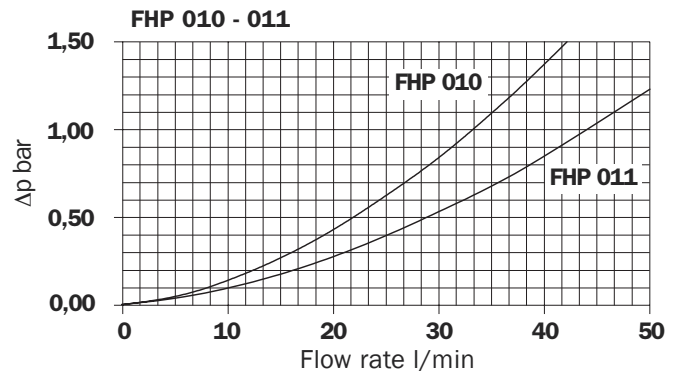
Connections

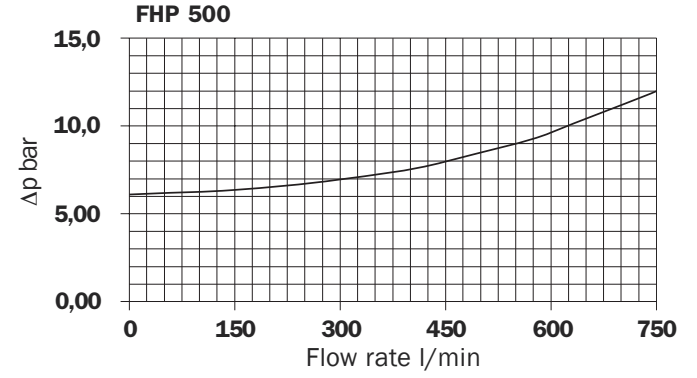
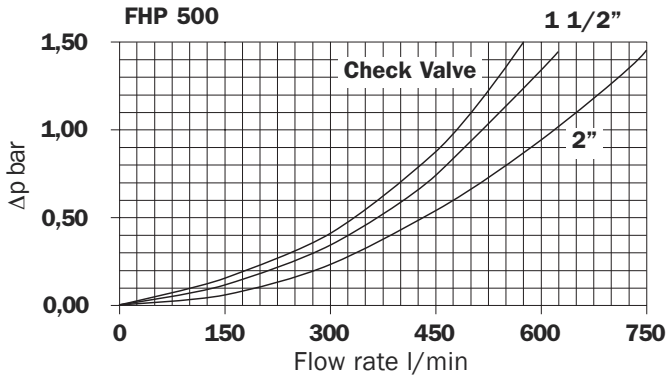
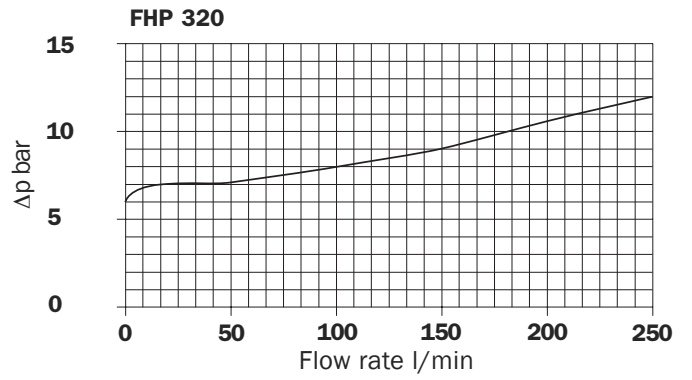
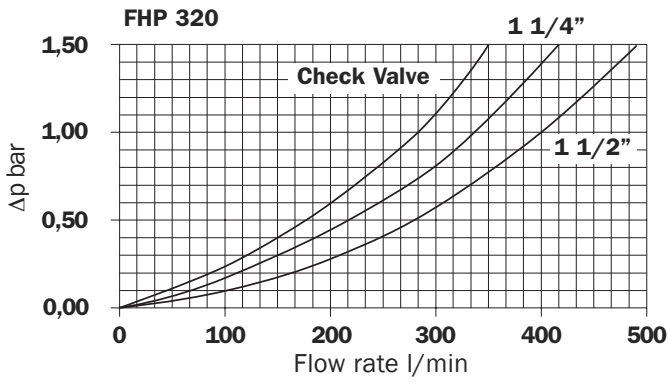
- FHP 010 - 065 - 135 - 500: In-line Inlet/Outlet
- FHP 011 - 320: 90° Inlet/Outlet

Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0,86 kg/dm³ to ISO 3968.

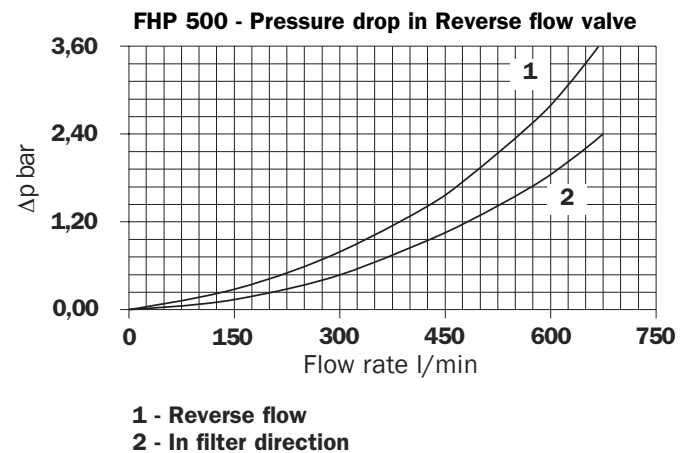
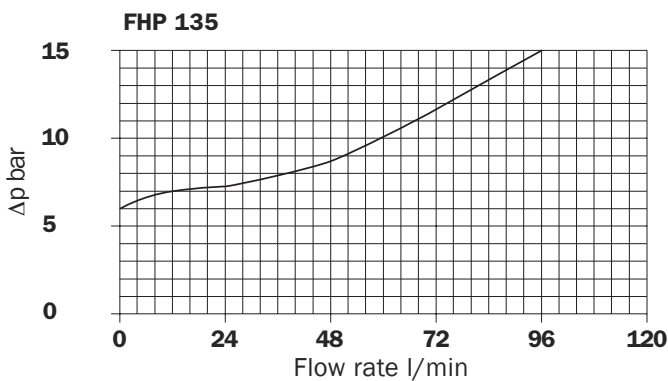
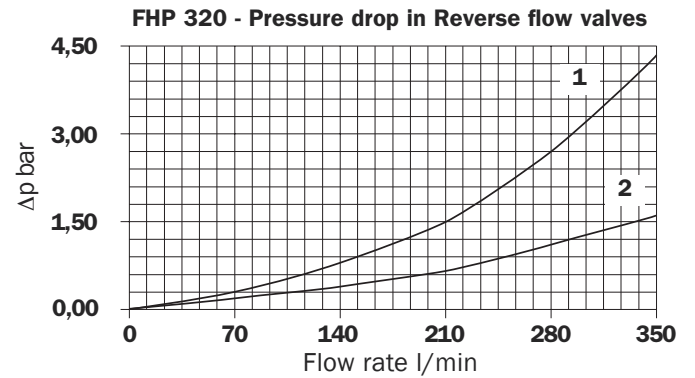
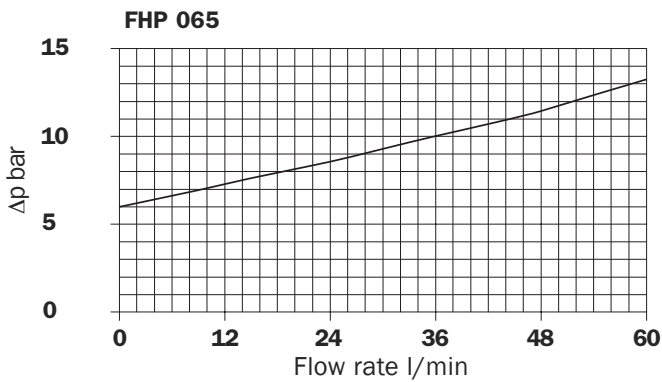
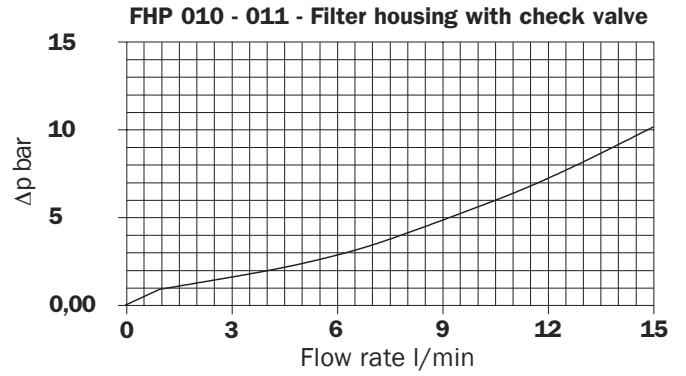
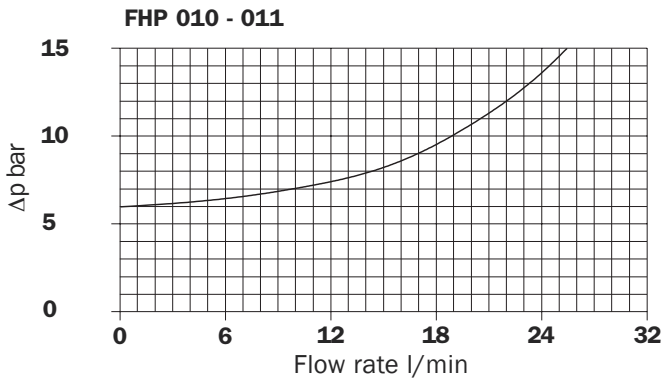
Δp varies proportionally with density.





Valves

Bypass valve pressure drop



Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 1,5 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0,86 kg/dm³.
- Connections of filter under test G 3/4".
- Connections of filter under test FLANGE 2" SAE 6000 PSI (only for FHP 500).

		Filtration						
		Length	A03	A06	A10	A16	A25	M25
FHP 010	1	4	6	8	9	11	15	
	2	6	8	16	18	22	25	
	3	11	14	20	25	28	30	
	4	15	18	23	28	32	36	

Serie N - Flow rate l/min

		Filtration					
		Length	A03	A06	A10	A16	A25
FHP 010	1	3	4	6	7	8	
	2	5	6	13	16	20	
	3	10	13	18	20	26	
	4	11	15	23	25	28	

Serie H - Flow rate l/min

		Filtration						
		Length	A03	A06	A10	A16	A25	M25
FHP 011	1	4	6	8	9	11	15	
	2	6	9	16	18	23	30	
	3	11	15	22	26	31	35	
	4	15	20	28	31	35	40	

Serie N - Flow rate l/min

		Filtration					
		Length	A03	A06	A10	A16	A25
FHP 011	1	3	5	6	7	8	
	2	5	6	14	16	21	
	3	10	14	21	24	28	
	4	12	15	24	26	31	

Serie H - Flow rate l/min

		Filtration						
		Length	A03	A06	A10	A16	A25	M25
FHP 065	1	24	32	55	60	88	105	
	2	33	50	70	78	102	110	
	3	60	70	100	106	118	120	

Serie N - Flow rate l/min

		Filtration					
		Length	A03	A06	A10	A16	A25
FHP 065	1	23	24	50	58	80	
	2	32	38	67	70	95	
	3	55	65	90	95	110	

Serie H - Flow rate l/min

		Filtration						
		Length	A03	A06	A10	A16	A25	M25
FHP 135	1	67	71	110	120	155	180	
	2	105	110	138	142	180	205	
	3	138	140	175	179	190	210	

Serie N - Flow rate l/min

		Filtration					
		Length	A03	A06	A10	A16	A25
FHP 135	1	48	55	93	97	145	
	2	88	105	128	130	160	
	3	120	130	155	165	180	

Serie H - Flow rate l/min

		Filtration						
		Length	A03	A06	A10	A16	A25	M25
FHP 320	1	126	139	230	270	320	410	
	2	248	270	365	380	420	430	
	3	310	340	410	420	430	440	
	4	345	360	415	430	440	450	

Serie N - Flow rate l/min

		Filtration					
		Length	A03	A06	A10	A16	A25
FHP 320	1	107	112	185	193	290	
	2	192	220	300	305	365	
	3	255	295	355	365	400	
	4	295	315	362	370	405	

Serie H - Flow rate l/min

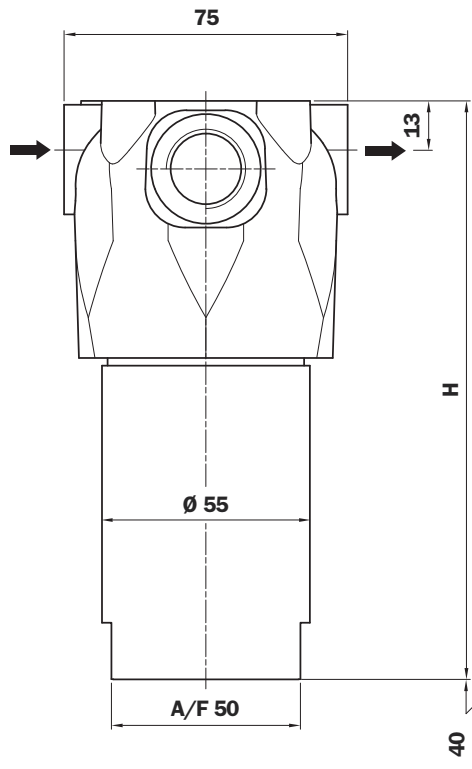
		Filtration						
		Length	A03	A06	A10	A16	A25	M25
FHP 500	1	280	320	425	450	495	720	
	2	340	375	385	495	550	730	
	3	435	460	570	575	620	740	
	4	480	540	600	610	640	745	
	5	540	560	625	640	675	750	

Serie N - Flow rate l/min

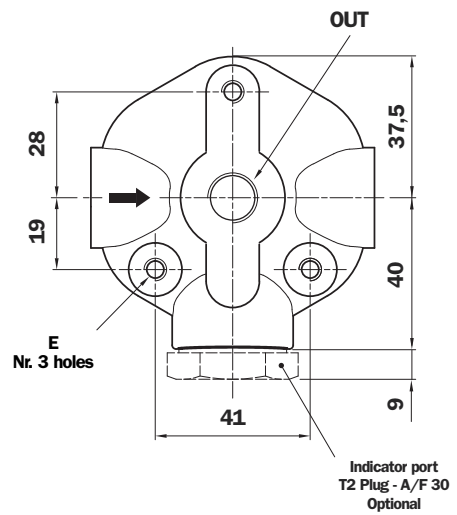
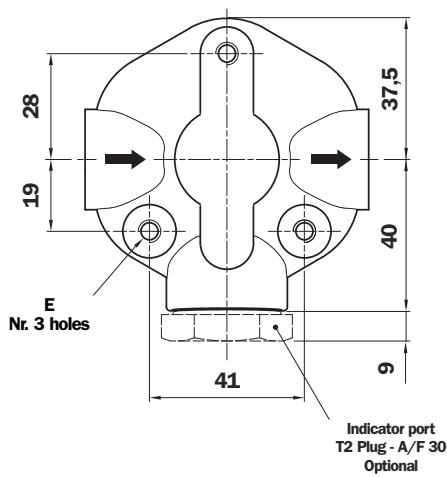
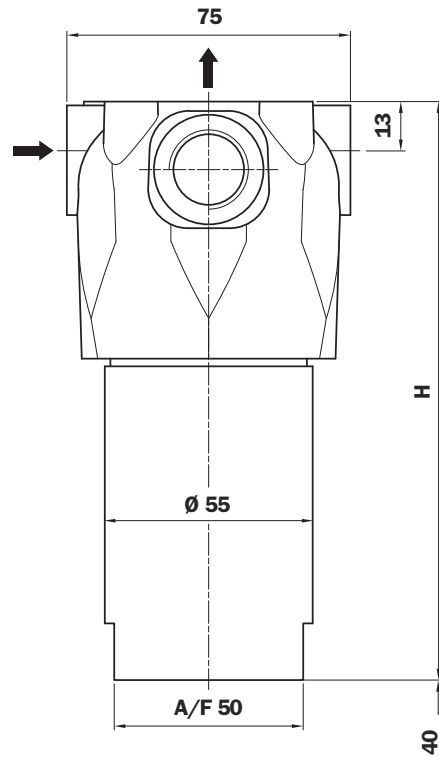
		Filtration					
		Length	A03	A06	A10	A16	A25
FHP 500	1	145	160	260	280	390	
	2	240	270	380	390	440	
	3	310	320	440	455	520	
	4	360	410	510	520	590	
	5	470	480	570	585	650	

Serie H - Flow rate l/min

FHP 010



FHP 011



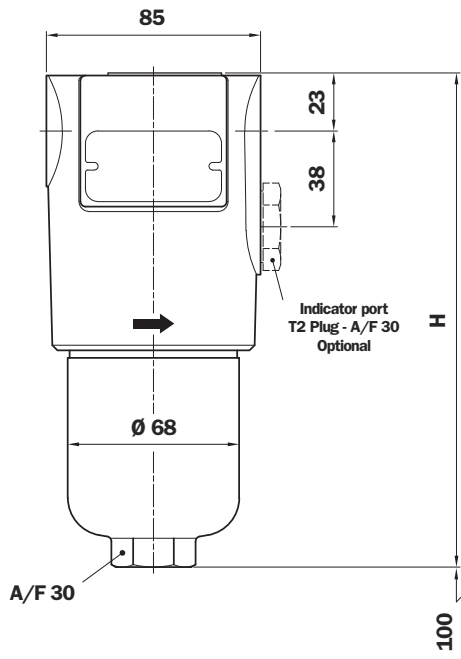
FHP 010 - 011

Filter Length	H mm
1	92
2	103
3	153
4	203

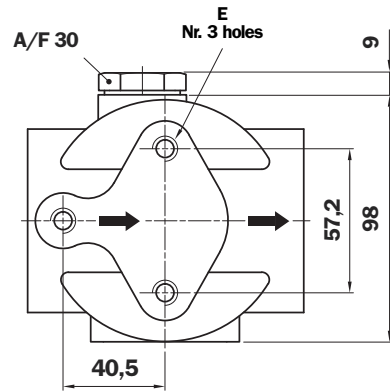
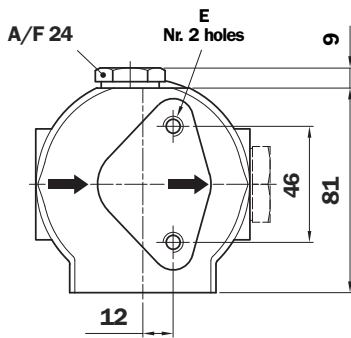
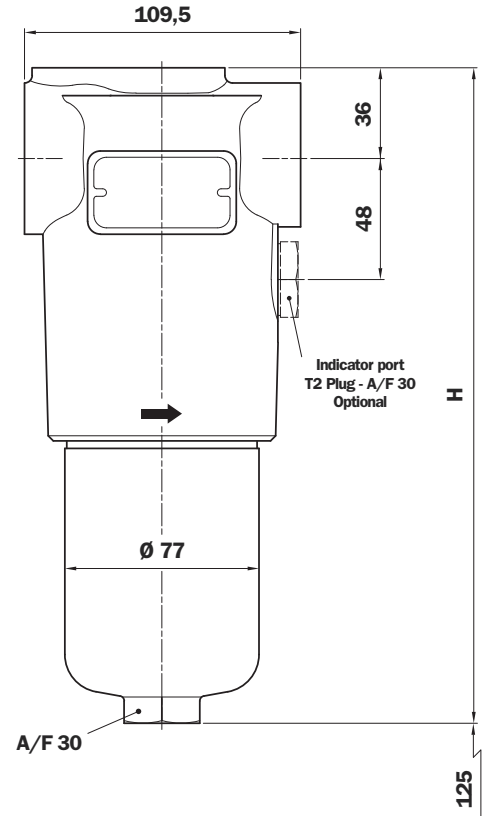
Thread connections

Type	Size	E Depth 12 mm
A	G 1/4"	M6
B	1/4" NPT	1/4" UNC
C	SAE 5-1/2" - 20 UNF	1/4" UNC
D	G 3/8"	M6
E	3/8" NPT	1/4" UNC
F	SAE 6-9/16" - 18 UNF	1/4" UNC

FHP 065



FHP 135



FHP 065

Filter Length	H mm
1	196
2	227
3	329

FHP 135

Filter Length	H mm
1	260
2	373
3	448

FHP 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

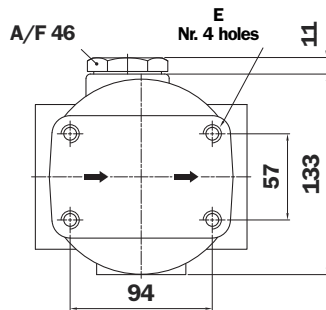
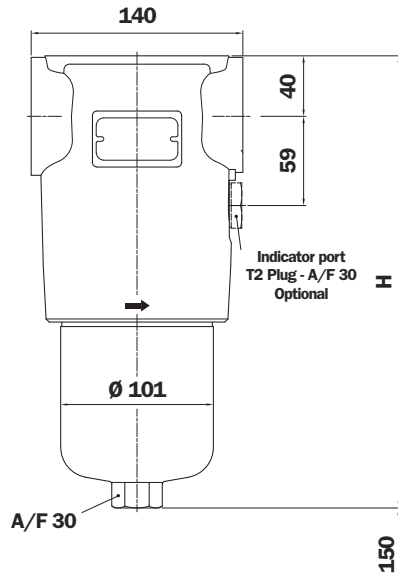
FHP 135 - Thread connections

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

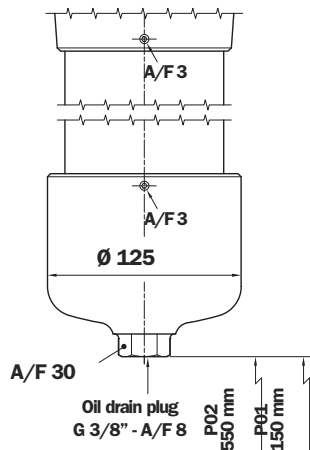
FHP 135 - Flange connections

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
F5	3/4" SAE 6000 psi/M	M10
F6	3/4" SAE 6000 psi/UNC	3/8" UNC

FHP 320



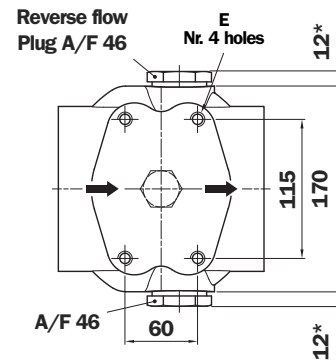
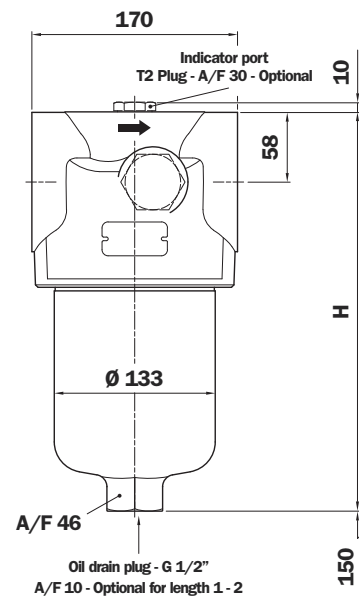
FHP 320 length 4



Style P01
Standard maintenance from head.

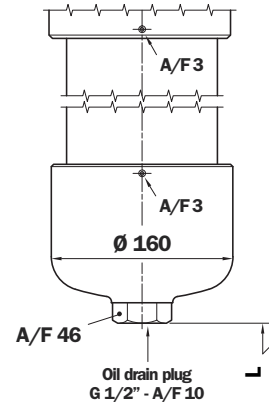
Style P02
Maintenance option from housing base.

FHP 500



* Only for Reverse flow

FHP 500 length 4 - 5



FHP 320 - 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 - 15/8" - 12 UN	1/2" UNC
G6	SAE 24 - 17/8" - 12 UN	1/2" UNC

FHP 320 - 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
F5	1 1/4" SAE 6000 psi/M	M12
F6	1 1/4" SAE 6000 psi/UNC	1/2" UNC

FHP 320

Filter Length	H mm
1	299
2	422
3	554
4	707

FHP 500

Filter Length	H mm
1	330
2	420
3	496
4	654
5	820

FHP 500 - Thread connections

Type	Size	E Depth 15 mm
G1	G 1 1/2"	M12
G2	1 1/2" NPT	1/2" UNC
G3	SAE 24 - 17/8" - 12 UN	1/2" UNC

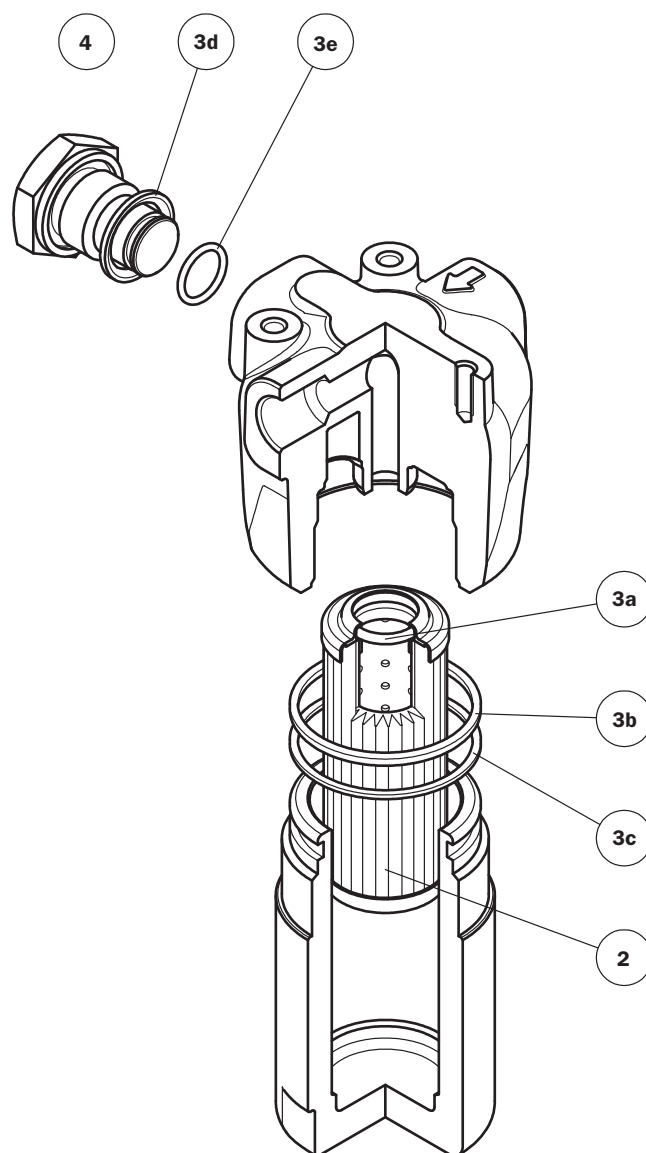
FHP 500 - Flange connections

Type	Size	E Depth 15 mm
F1	1 1/2" SAE 3000 psi/M	M12
F2	1 1/2" SAE 3000 psi/UNC	1/2" UNC
F3	2" SAE 3000 psi/M	M12
F4	2" SAE 3000 psi/UNC	1/2" UNC
F5	1 1/2" SAE 6000 psi/M	M12
F6	1 1/2" SAE 6000 psi/UNC	1/2" UNC
F7	2" SAE 6000 psi/M	M12
F8	2" SAE 6000 psi/UNC	1/2" UNC

Style P01	
Filter length	L (mm)
4 - 5	150

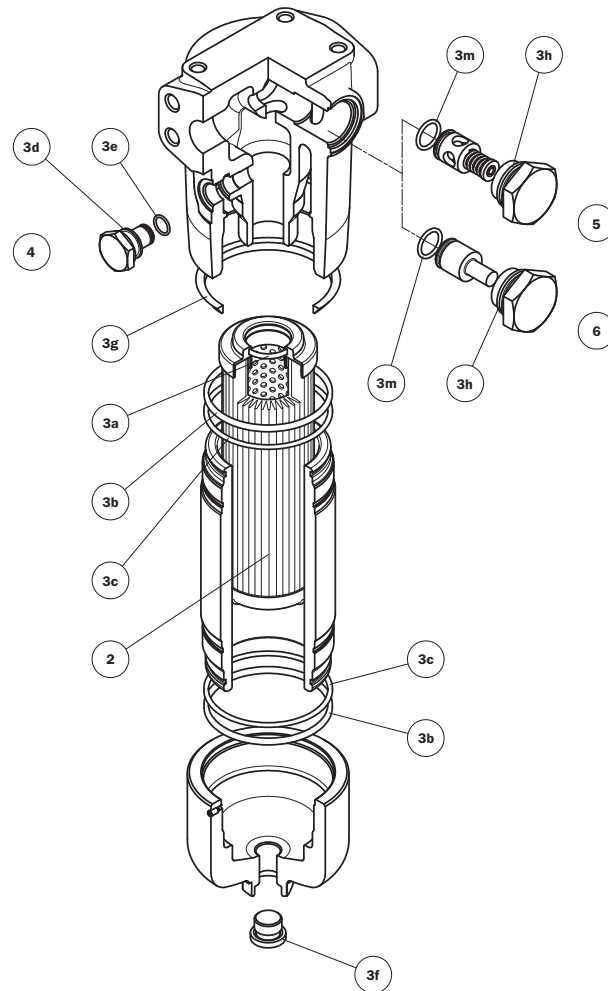
Style P02	
Filter length	L (mm)
4	480
5	650

Spare parts



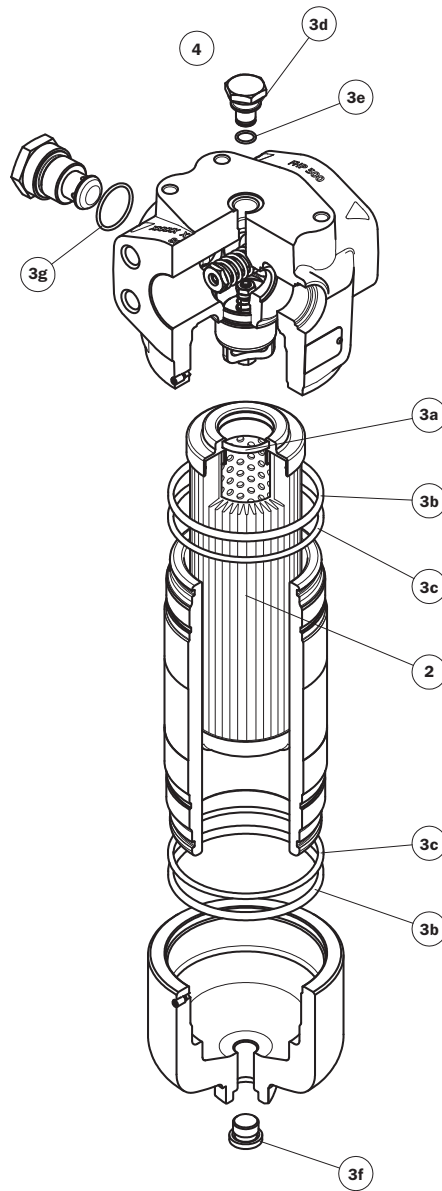
Item	Description	Q.ty	FILTER Series FHP 010 - 011	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seal Kit	1	NBR 02050501	FPM 02050492
3a	O-Ring for filter element	1	O-R 121 Ø 15,88 x 2,62	
3b	O-Ring for housing	1	O-R 3168 Ø 42,52 x 3,53	
3c	Anti-extrusion ring	1	Parbak 131 Ø 43,33 x 2,18	
3d	Indicator seal	1	01030058 (HNBR)	01030046 (FPM)
3e	O-Ring indicator	1	O-R 2050 Ø 12,42 x 1,78	
4	Indicator connection plug	1*	T2H	T2V

* 0 for version 1 (without indicator port)
1 for version 2 (with indicator port)



Item	Description	Q.ty	FILTER Series					
			FHP 065		FHP 135		FHP 320	
1	Filter assembly	1	See order table					
2	Filter element	1	See order table					
3	Seal Kit	1	NBR 02050265	FPM 02050276	NBR 02050269	FPM 02050280	NBR 02050272	FPM 02050283
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 seal	
3g	Protective seal	1	01026521		01026509		01026510	
3h	Bp or Non-Bp seal	1	O-R 121 (90 Sh A) Ø 15,88 x 2,62		O-R 3087 (90 Sh A) Ø 21,89 x 2,62		O-R 3143 (90 Sh A) Ø 36,14 x 2,62	
3m	Bp or Non-Bp seal	1	O-R 2031 Ø 7,66 x 1,78		O-R 2037 Ø 9,25 x 1,78		O-R 2081 Ø 20,35 x 1,78	
4	Indicator connection plug	1	T2H	T2V	T2H	T2V	T2H	T2V
5	Bypass assembly	1	02001116	02001136	02001117	02001137	02001118	02001138
6	Non-bypass assembly	1	02001142	02001139	02001143	02001392	02001144	02001395

Spare parts



Item	Description	Q.ty	FILTER Series FHP 500	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seal Kit	1	NBR 02050330	FPM 02050331
3a	Filter element seal	1	O-R 153 Ø 49,21 x 3,53	
3b	Bowl seal	2	O-R 4462 Ø 117,10 x 3,53	
3c	Bowl seal anti-extrusion ring	2	Parbak 247 Ø 117,63 x 3	
3d	Gasket	1	01030058 (HNBR)	01030046 (FPM)
3e	O-Ring indicator	1	O-R 2050 Ø 12,42 x 1,78	
3f	Drain plug	1	G 1/2" with seal	
3g	Reverse flow seal	1	O-R 3143 (90 Sh A) Ø 36,14 x 2,62	
4	Indicator connection plug	1	T2H	T2V

Ordering information FHP 010 - 011

Filter assembly FHP

	1	2	3	4	5	6	7	8	9
	<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"/>
Example: FHP	010	2	B	A	A	1	A10	H	P01

Filter element HP

	1	2	7	4	8	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: HP	011	2	A10	A	H	P01

1 - Style

Filter	Filter element
010	011
011	011

2 - Filter length

010	1	2	3	4
011	1	2	3	4

3 - Valves

S	Without bypass
B	With bypass (opening pressure: 6 bar)
V	With reverse flow + without bypass
Z	With reverse flow + bypass

4 - Filter seals

A	NBR
V	FPM

5 - Connections

Threaded

FHP 010 - 011

Type	Size
A	G 1/4"
B	1/4" NPT
C	SAE 5 - 1/2" - 20 UNF
D	G 3/8"
E	3/8" NPT
F	SAE 6 - 9/16" - 18 UNF

6 - Indicator port

1	Without indicator port
2	With indicator port

7 - Filter element

A03	Inorganic microfibre	3 µm	} Absolute filtration Inorganic Microfibre βx (c) ≥ 1000
A06	Inorganic microfibre	6 µm	
A10	Inorganic microfibre	10 µm	
A16	Inorganic microfibre	16 µm	
A25	Inorganic microfibre	25 µm	
M25	Wire mesh	25 µm	} Nominal Filtration

8 - Max filter element differential pressure

N	Δp 20 bar
H	Δp 210 bar

9 - Option

P01	MP Filtri standard
Pxx	Customer request

Indicator plug:

Phosphated Steel plug T2 has to be ordered separately.

Code

T2H	Seal NBR
T2V	Seal FPM

For Clogging Indicator:
See page 324

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved.

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

Ordering information FHP 065 - 135 - 320

Filter assembly

FHP

	1	2	3	4	5	6	7	8a
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: FHP	135	1	S	A	G1	A03	H	P01

Filter element

HP

	1	2	6	4	7	8b
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: HP	135	1	A03	A	H	P01

1 - Style

Filter	Filter element
065	065
135	135
320	320

2 - Filter length

065	1	2	3	
135	1	2	3	
320	1	2	3	4

3 - Valves

S	Without bypass
B	With bypass
T	Without bypass + check valve*
D	With bypass + check valve*
V	With reverse flow (only for size 320)*
Z	With reverse flow + bypass (only for size 320)*

*Reduced cross-section oilways

4 - Filter seals

A	NBR
V	FPM

5 - Connections

Threaded

FHP 065

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

FHP 135

Type	Size
G1	G 3/4"
G2	G 1"
G3	3/4" NPT
G4	1" NPT
G5	SAE 12 - 1 1/16" - 12 UN
G6	SAE 16 - 1 5/16" - 12 UN

FHP 320

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

Flanged

FHP 135

Type	Size
F1	3/4" SAE 3000 psi/M
F2	1" SAE 3000 psi/M
F3	3/4" SAE 3000 psi/UNC
F4	1" SAE 3000 psi/UNC
F5	3/4" SAE 6000 psi/M
F6	3/4" SAE 6000 psi/UNC

FHP 320

Type	Size
F1	1 1/4" SAE 3000 psi/M
F2	1 1/2" SAE 3000 psi/M
F3	1 1/4" SAE 3000 psi/UNC
F4	1 1/2" SAE 3000 psi/UNC
F5	1 1/4" SAE 6000 psi/M
F6	1 1/4" SAE 6000 psi/UNC

6 - Filter element

A03	Inorganic microfibre 3 µm	Absolute filtration Inorganic Microfibre Bx (c) ≥ 1000
A06	Inorganic microfibre 6 µm	
A10	Inorganic microfibre 10 µm	
A16	Inorganic microfibre 16 µm	
A25	Inorganic microfibre 25 µm	
M25	Wire mesh 25 µm	Nominal Filtration

7 - Max filter element differential pressure

N	Δp 20 bar
R	Δp 20 bar (filter with reverse flow + bypass)
H	Δp 210 bar
S	Δp 210 bar (filter with reverse flow)

8 - Option

a - Filter

P01	MP Filtri standard
P02	Maintenance from housing base (only for FHP 320 - 4)
Pxx	Customer request

b - Filter element

P01	MP Filtri standard
Pxx	Customer request

Indicator plug:

Phosphated Steel plug T2 has to be ordered separately.

Code

T2H	Seal NBR
T2V	Seal FPM

For Clogging Indicator:
See page 324

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved.

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

Ordering information FHP 500

Filter assembly

FHP

Example: FHP

1	2	3	4	5	6	7	8a
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
500	4	B	A	G1	A10	N	P01

Filter element

HP

Example: HP

1	2	6	4	7	8b
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
500	4	A10	A	N	P01

1 - Style

Filter

Filter element

2 - Filter length

3 - Valves

<input type="text" value="S"/>	Without bypass
<input type="text" value="B"/>	With bypass
<input type="text" value="T"/>	Without bypass + check valve*
<input type="text" value="D"/>	With bypass + check valve*
<input type="text" value="V"/>	With reverse flow*
<input type="text" value="Z"/>	With reverse flow + bypass*

*Reduced cross-section oilways

4 - Filter seals

<input type="text" value="A"/>	NBR
<input type="text" value="V"/>	FPM

5 - Connections

Threaded

Type	Size
G1	G 1 1/2"
G2	1 1/2" NPT
G3	SAE 24 - 1 7/8" - 12 UN

Flanged

Type	Size
F1	1 1/2" SAE 3000 psi/M
F2	1 1/2" SAE 3000 psi/UNC
F3	2" SAE 3000 psi/M
F4	2" SAE 3000 psi/UNC
F5	1 1/2" SAE 6000 psi/M
F6	1 1/2" SAE 6000 psi/UNC
F7	2" SAE 6000 psi/M
F8	2" SAE 6000 psi/UNC

6 - Filter element

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

7 - Max filter element differential pressure

<input type="text" value="N"/>	Δp 20 bar
<input type="text" value="S"/>	Δp 210 bar

8 - Option

a - Filter

<input type="text" value="P01"/>	MP Filtri standard
<input type="text" value="P02"/>	MP with replacement of the filter element from the cap (only length 4 - 5)
<input type="text" value="P03"/>	Oil drain plug (only length 1 - 2 / standard for length 3 - 4 - 5)
<input type="text" value="Pxx"/>	Customer request

b - Filter element

<input type="text" value="P01"/>	MP Filtri standard
<input type="text" value="Pxx"/>	Customer request

Indicator plug:

Phosphated Steel plug T2 has to be ordered separately.

Code

<input type="text" value="T2H"/>	Seal NBR
<input type="text" value="T2V"/>	Seal FPM

For Clogging Indicator:
See page 324

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved.

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.