

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

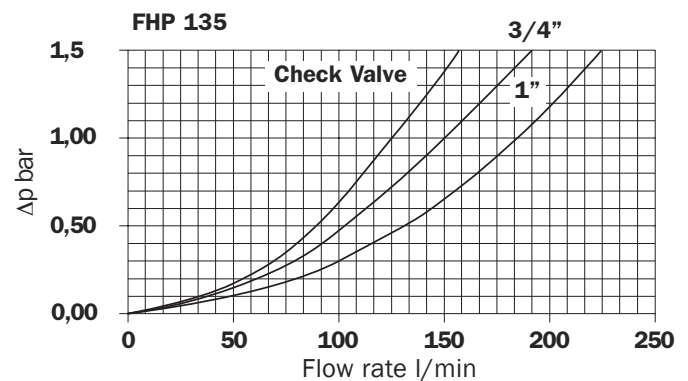
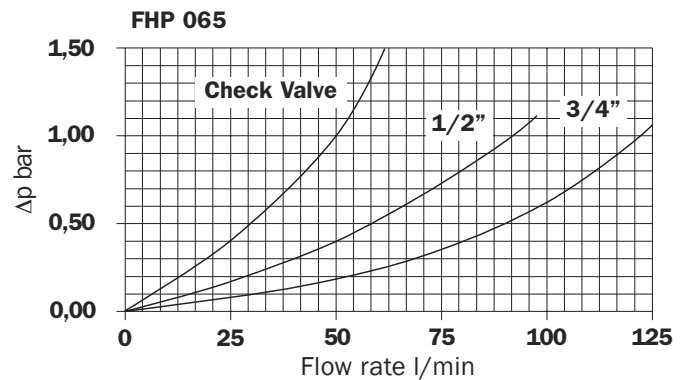
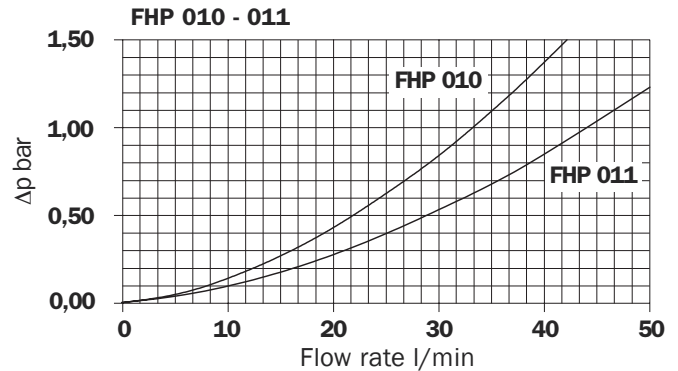
Connections

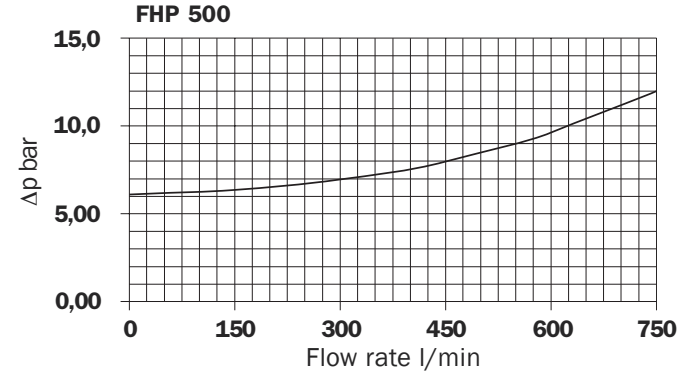
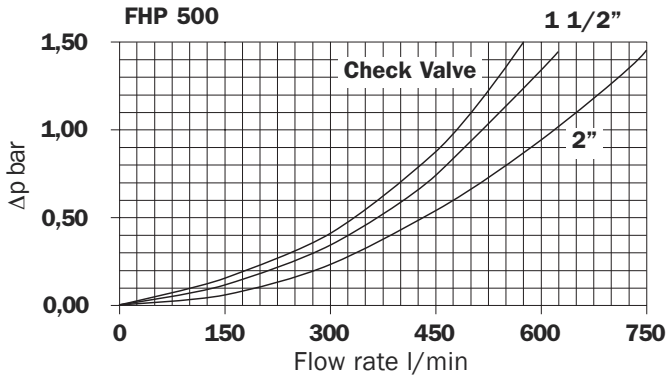
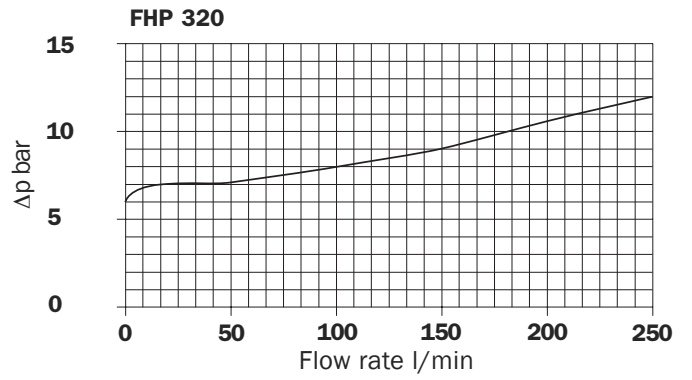
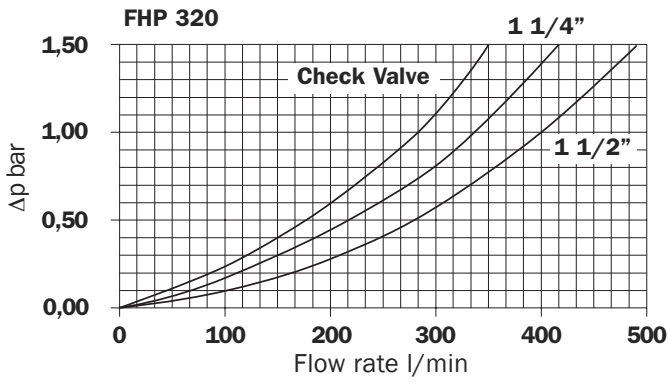
- FHP 010 - 065 - 135 - 500: In-line Inlet/Outlet
- FHP 011 - 320: 90° Inlet/Outlet

Filter housings Δp pressure drop

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

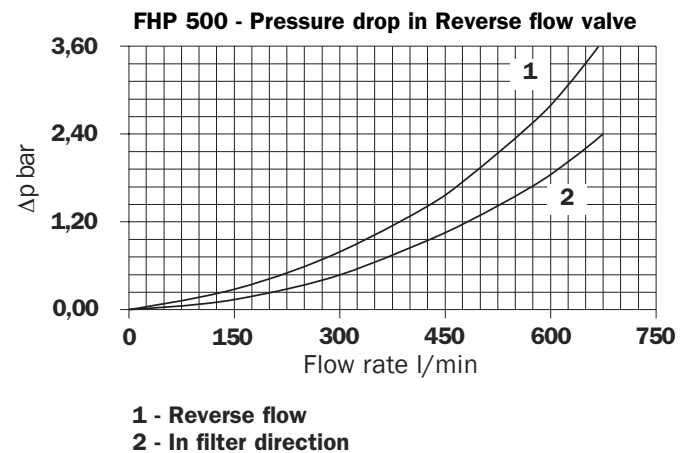
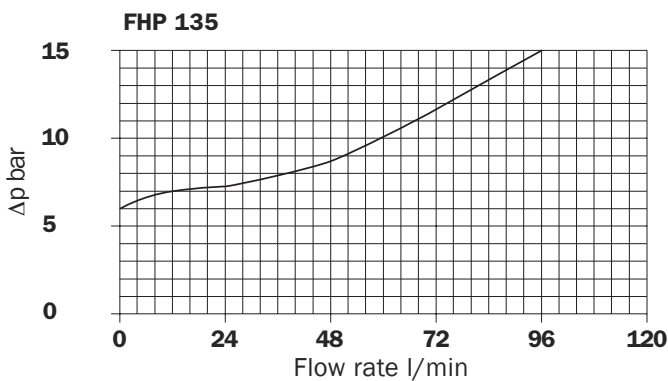
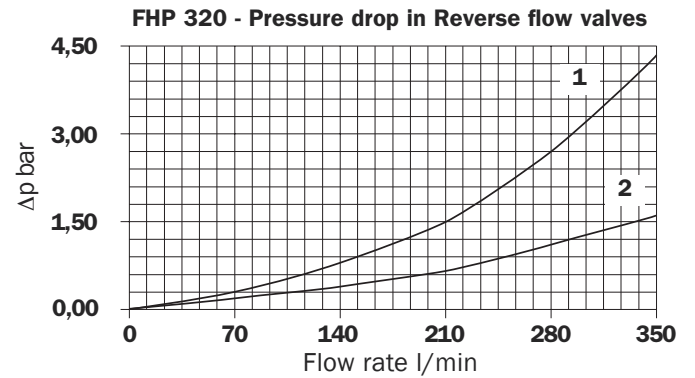
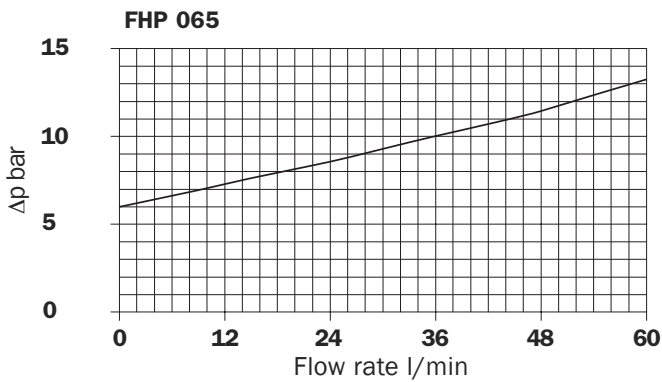
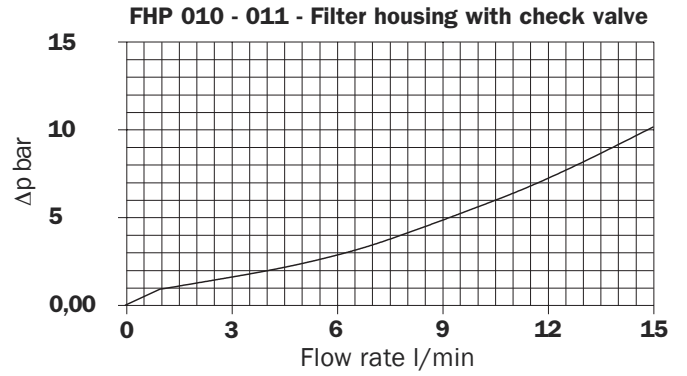
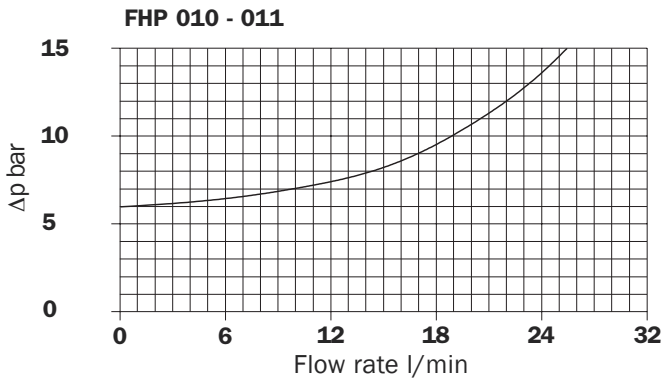
Δp varies proportionally with density.





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	

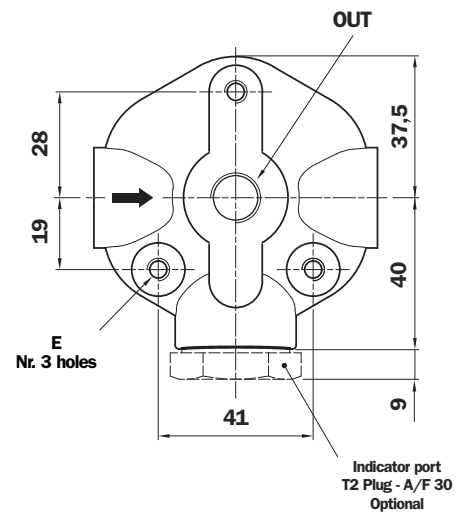
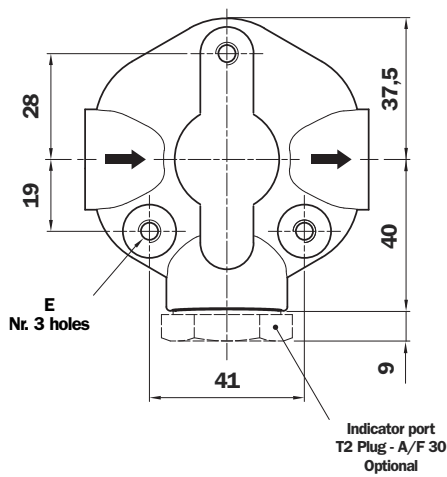
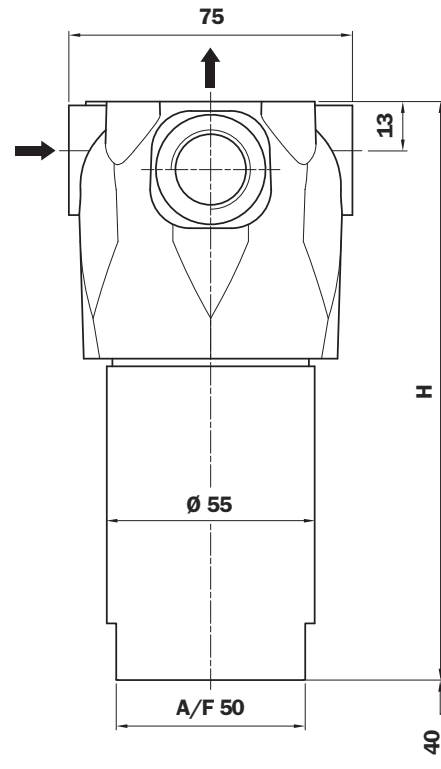
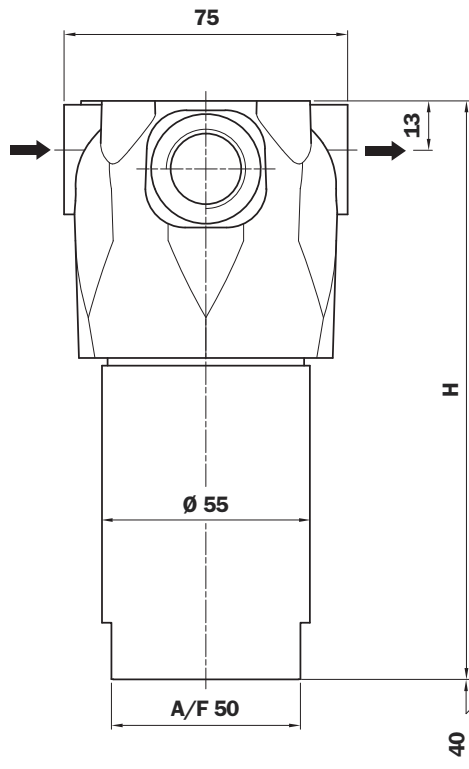
Serie N - Flow rate l/min

		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



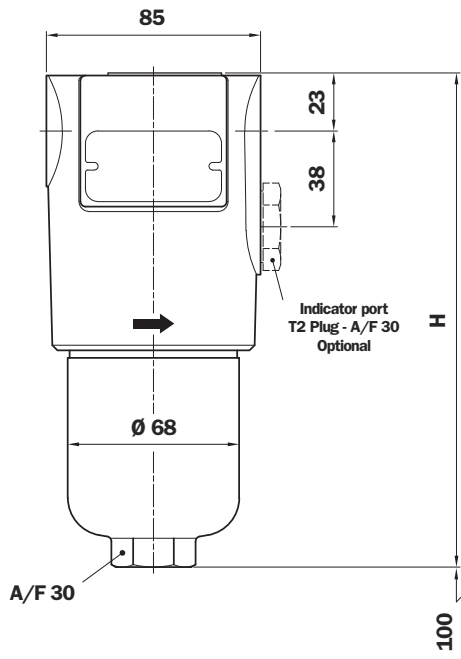
FHP 010 - 011

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

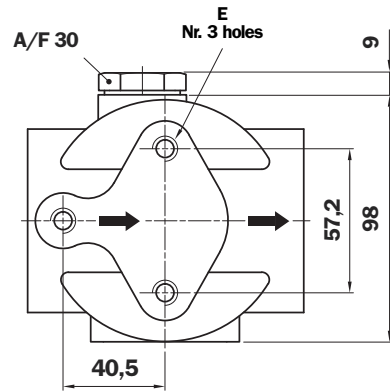
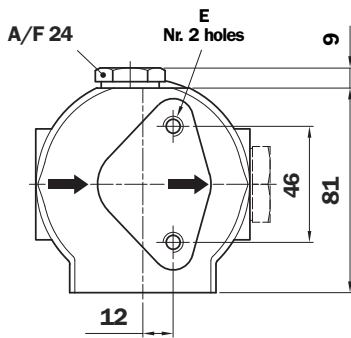
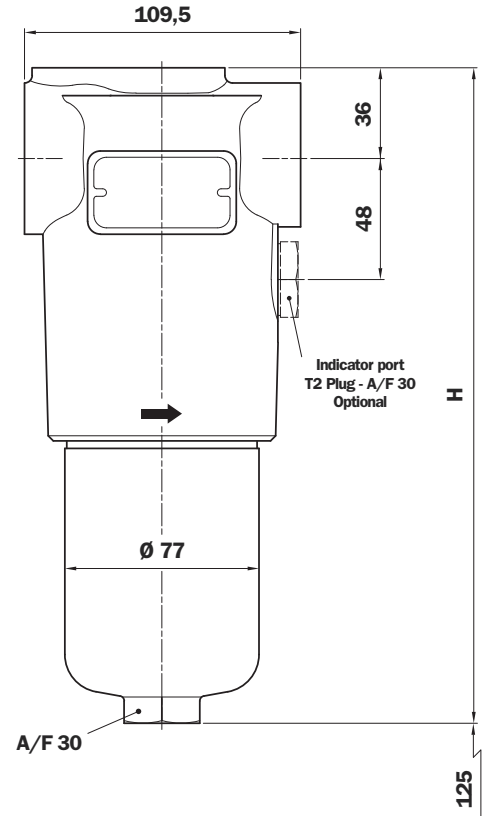
Thread connections

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

Length Filter	H mm
1	196
2	227
3	329

FHP 135

Length Filter	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

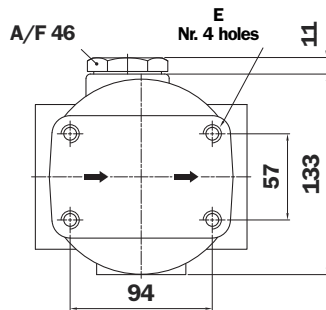
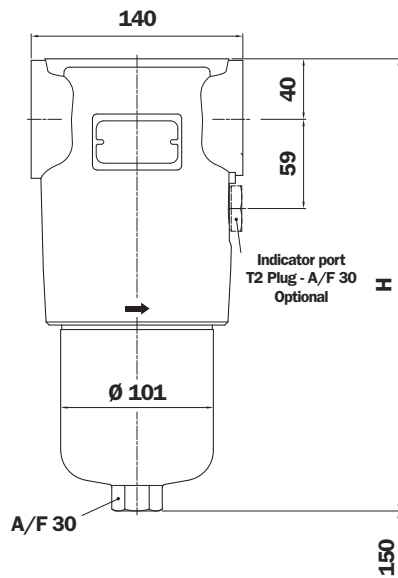
FHP 135 - Thread connections

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

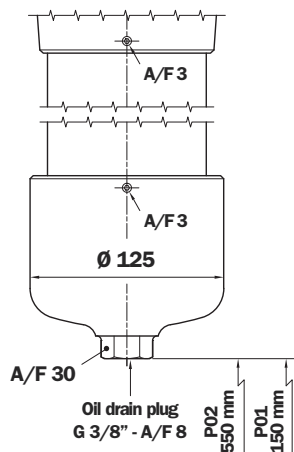
FHP 135 - Flange connections

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

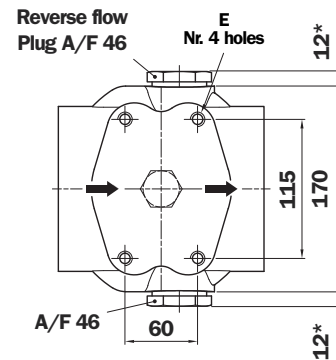
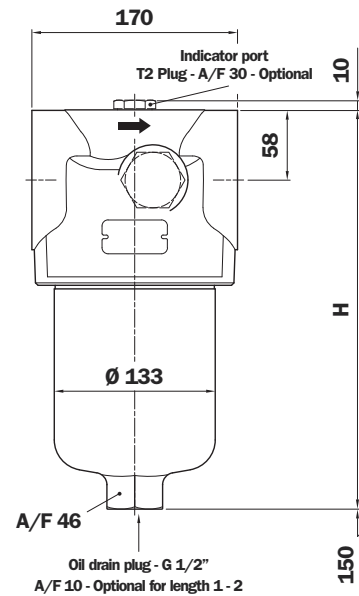
FHP 320



FHP 320 length 4

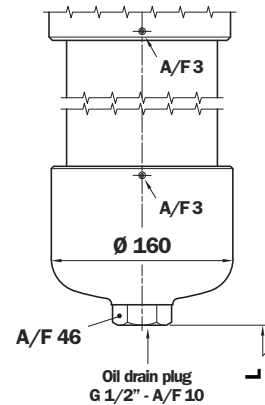


FHP 500



* Only for Reverse flow

FHP 500 length 4 - 5



Style P01
Standard maintenance from head.

Style P02
Maintenance option from housing base.

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 - 1 7/8" - 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

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

FHP 500

Length Filter	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 - 1 7/8" - 12 UN	1/2" UNC

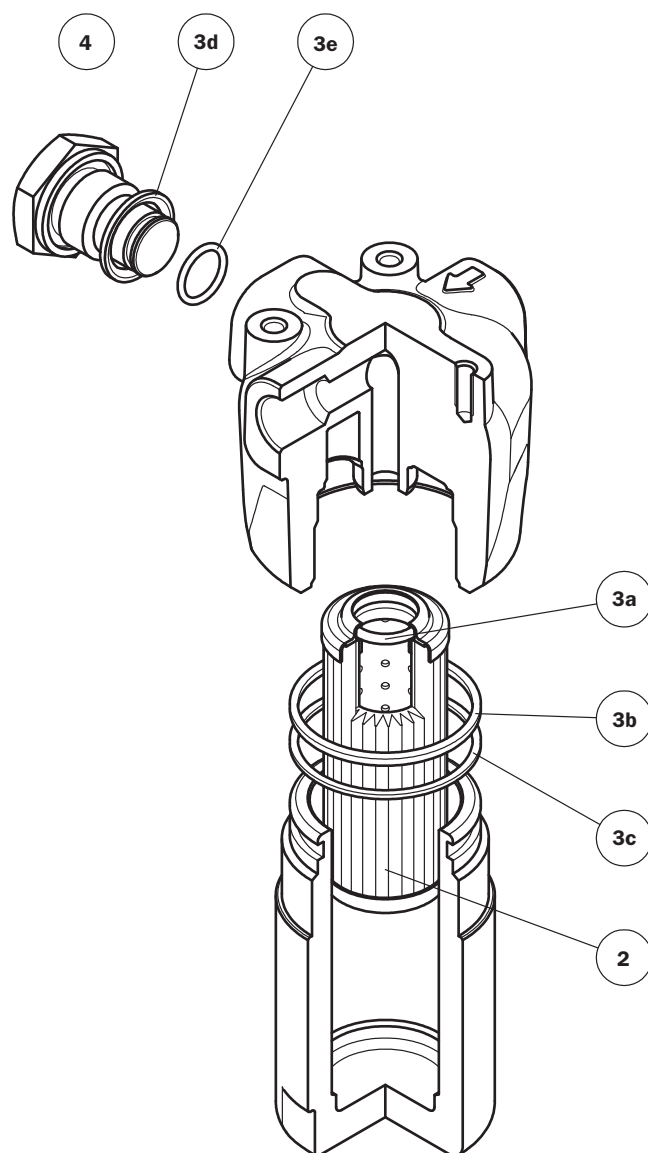
FHP 500 - Flange connections

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

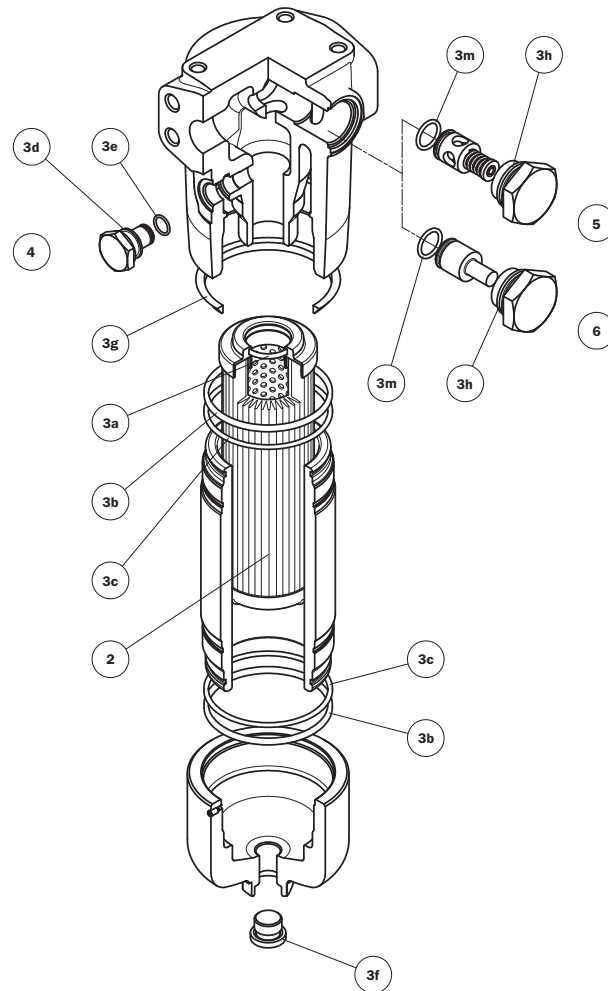
Style P02	
Filter length	L (mm)
4	480
5	650

Spare parts



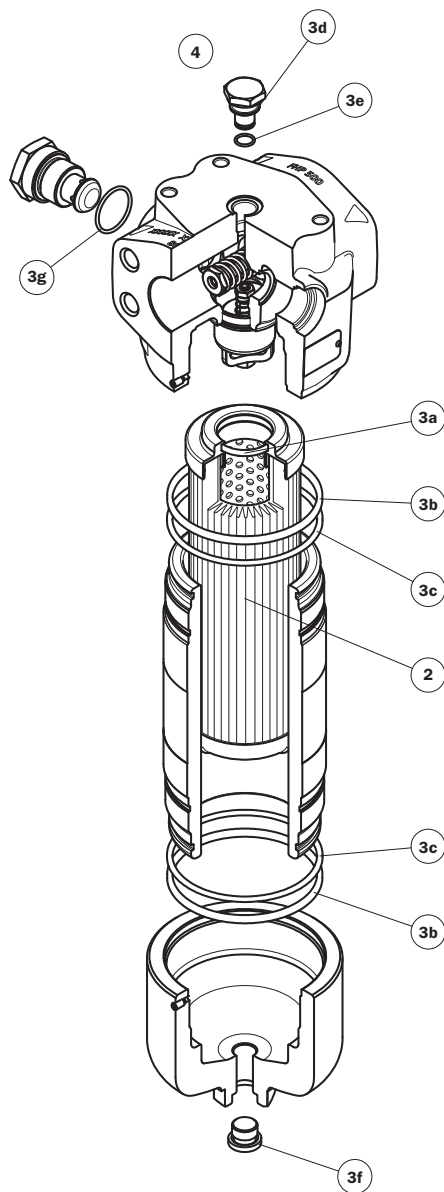
Item	Description	Q.ty	FILTER Series FHP 010 - 011	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seal Kit	1	NBR 02050501	FPM 02050492
3a	O-Ring for filter element	1	O-R 121 Ø 15,88 x 2,62	
3b	O-Ring for housing	1	O-R 3168 Ø 42,52 x 3,53	
3c	Anti-extrusion ring	1	Parbak 131 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 bonded 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 bonded 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

6 - Indicator port

1	Without indicator port
2	With indicator port

2 - Filter length

010	1	2	3	4
011	1	2	3	4

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	} Nominal Filtration
M25	Wire mesh	25 µm	

3 - Valves

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

8 - Max filter element differential pressure

N	Δp 20 bar
H	Δp 210 bar

4 - Filter seals

A	NBR
V	FPM

9 - Option

P01	MP Filtri standard
Pxx	Customer request

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

Indicator plug:

Phosphated Steel plug T2 has to be ordered separately.

Code

T2H	Seal NBR
T2V	Seal FPM

For Clogging Indicator:
See page 318

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.

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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 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

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 318

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Ordering information FHP 500

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

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

1 - Style

Filter	Filter element
<input type="text" value="500"/>	<input type="text" value="500"/>

2 - Filter length

<input type="text" value="500"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>
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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 318

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