

FHP series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 750 l/min



FILTER SIZING

INDEX

	Page
CALCULATION	23
CORRECTIVE FACTOR	24

THE CORRECT FILTER SIZING HAVE TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING BY THE APPLICATION.

FOR EXAMPLE, THE MAXIMUM TOTAL PRESSURE DROP ALLOWED BY A NEW AND CLEAN RETURN FILTER HAVE TO BE IN THE RANGE $0.4 \div 0.6$ bar.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δp_c of the housing is proportional to the fluid density (kg/dm^3); all the graphs in the catalogue are referred to mineral oil with density of 0.86 kg/dm^3 .

The filter element pressure drop Δp_e is proportional to its viscosity (mm^2/s), the corrective factor Y have to be used in case of an oil viscosity different than $30 \text{ mm}^2/\text{s}$ (cSt).

Sizing data for single filter element, head at top

Δp_c = Filter housing pressure drop [bar]

Δp_e = Filter element pressure drop [bar]

Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media

Q = flow rate (l/min)

V1 reference oil viscosity = $30 \text{ mm}^2/\text{s}$ (cSt)

V2 = operating oil viscosity in mm^2/s (cSt)

Filter element pressure drop calculation with an oil viscosity different than $30 \text{ mm}^2/\text{s}$ (cSt)

$\Delta p_e = Y : 1000 \times Q \times (V2:V1)$

$\Delta p_{\text{Tot.}} = \Delta p_c + \Delta p_e$

Verification formula

$\Delta p_{\text{Tot.}} \leq \Delta p_{\text{max allowed}}$

Maximum total pressure drop (Δp_{max}) allowed by a new and clean filter

Application	Range (bar)
Suction filters	$0.08 \div 0.10$
Return filters	$0.4 \div 0.6$
	$0.4 \div 0.6$ return lines
	$0.3 \div 0.5$ lubrication lines
Low & Medium Pressure filters	$0.3 \div 0.4$ off-line in power systems
	$0.1 \div 0.3$ off-line in test benches
	$0.4 \div 0.6$ over-boost
High Pressure filters	$0.8 \div 1.5$
Stainless Steel filters	$0.8 \div 1.5$

Generic filter calculation example

Application data:

Tank top return filter

Pressure $P_{\text{max}} = 10$ bar

Flow rate $Q = 120$ l/min

Viscosity $V2 = 46 \text{ mm}^2/\text{s}$ (cSt)

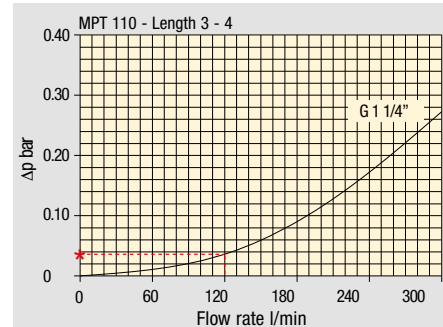
Oil density = 0.86 kg/dm^3

Required filtration efficiency = $25 \mu\text{m}$ with absolute filtration

With bypass valve and G 1 1/4" inlet connection

Calculation:

$\Delta p_c = 0.03$ bar (see graphic below)



Filter housings Δp pressure drop. The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

$\Delta p_e = (2.00 : 1000) \times 120 \times (46 : 30) = 0.37$ bar

Filter element		Absolute filtration H Series					Nominal filtration N Series		
Type		A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
Return filters									
MF 020		74.00	50.08	20.00	16.00	9.00	6.43	5.51	4.40
	2	29.20	24.12	8.00	7.22	5.00	3.33	2.85	2.00
	3	22.00	19.00	6.56	5.33	4.33	1.68	1.44	1.30
MF 030									
MFX 030	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MF 100 MFX 100	1	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	2	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	3	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
	4	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82

$\Delta p_{\text{Tot.}} = 0.03 + 0.37 = 0.4$ bar

The selection is correct because the total pressure drop value is inside the admissible range for top tank return filters.

In case the allowed max total pressure drop is not verified, it is necessary to repeat the calculation changing the filter length/size.

FILTER SIZING Corrective factor

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm²/s

Return filters

Filter element		Absolute filtration H Series					Nominal filtration N Series		
Type		A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
MF 020	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	4.40
	2	29.20	24.12	8.00	7.22	5.00	3.33	2.85	2.00
	3	22.00	19.00	6.56	5.33	4.33	1.68	1.44	1.30
MF 030 MFX 030	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MF 100 MFX 100	1	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	2	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	3	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
	4	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82
MF 180 MFX 180	1	3.67	3.05	1.64	1.56	1.24	1.18	1.06	0.26
	2	1.69	1.37	0.68	0.54	0.51	0.43	0.39	0.12
MF 190 MFX 190	2	1.69	1.37	0.60	0.49	0.44	0.35	0.31	0.11
MF 400 MFX 400	1	3.20	2.75	1.39	1.33	1.06	0.96	0.87	0.22
	2	2.00	1.87	0.88	0.85	0.55	0.49	0.45	0.13
	3	1.90	1.60	0.63	0.51	0.49	0.39	0.35	0.11
MF 750 MFX 750	1	1.08	0.84	0.49	0.36	0.26	0.21	0.19	0.06
MLX 250	2	3.00	3.04	1.46	1.25	1.17	-	-	M25 0.20
MLX 660	2	1.29	1.26	0.52	0.44	0.38	-	-	M25 0.10
CU 025		78.00	48.00	28.00	24.00	9.33	9.33	8.51	1.25
CU 040		25.88	20.88	10.44	10.00	3.78	3.78	3.30	1.25
CU 100		15.20	14.53	5.14	4.95	2.00	2.00	0.17	1.10
CU 250		3.25	2.55	1.55	1.35	0.71	0.71	0.59	0.25
CU 630		1.96	1.68	0.85	0.72	0.42	0.42	0.36	0.09
CU 850		1.06	0.84	0.42	0.33	0.17	0.17	0.13	0.04
MR 100	1	19.00	17.00	6.90	6.30	4.60	2.94	2.52	1.60
	2	11.70	10.80	4.40	4.30	3.00	2.94	2.52	1.37
	3	7.80	6.87	3.70	3.10	2.70	2.14	1.84	1.34
	4	5.50	4.97	2.60	2.40	2.18	1.72	1.47	1.34
	5	4.20	3.84	2.36	2.15	1.90	1.60	1.37	1.34
MR 250	1	5.35	4.85	2.32	1.92	1.50	1.38	1.20	0.15
	2	4.00	3.28	1.44	1.10	1.07	0.96	0.83	0.13
	3	2.60	2.20	1.08	1.00	0.86	0.77	0.64	0.12
	4	1.84	1.56	0.68	0.56	0.44	0.37	0.23	0.11
MR 630	1	3.10	2.48	1.32	1.14	0.92	0.83	0.73	0.09
	2	2.06	1.92	0.82	0.76	0.38	0.33	0.27	0.08
	3	1.48	1.30	0.60	0.56	0.26	0.22	0.17	0.08
	4	1.30	1.20	0.48	0.40	0.25	0.21	0.16	0.08
	5	0.74	0.65	0.30	0.28	0.13	0.10	0.08	0.04
MR 850	1	0.60	0.43	0.34	0.25	0.13	0.12	0.09	0.03
	2	0.37	0.26	0.23	0.21	0.11	0.08	0.07	0.03
	3	0.27	0.18	0.17	0.17	0.05	0.04	0.04	0.02
	4	0.23	0.16	0.13	0.12	0.04	0.03	0.03	0.02

Return / Suction filters

Filter element		Absolute filtration		
Type		A10	A16	A25
RSX 116	1	5.12	4.33	3.85
	2	2.22	1.87	1.22
RSX 165	1	2.06	1.75	1.46
	2	1.24	1.05	0.96
	3	0.94	0.86	0.61

Filter element		Absolute filtration N Series							
Type		A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.16	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05

Low & Medium pressure filters

Filter element		Absolute filtration N-W Series					Nominal filtration N Series		
Type		A03	A06	A10	A16	A25	P10	P25	M25
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.15	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05
CU 210	1	5.30	4.80	2.00	1.66	1.32	0.56	0.43	0.12
	2	3.44	2.95	1.24	1.09	0.70	0.42	0.35	0.09
	3	2.40	1.70	0.94	0.84	0.54	0.33	0.23	0.05
DN	016	7.95	7.20	3.00	2.49	1.98	0.84	0.65	0.18
	025	5.00	4.53	1.89	1.57	1.25	0.53	0.41	0.11
	040	3.13	2.66	1.12	0.98	0.63	0.38	0.32	0.08
CU 400	2	3.13	2.55	1.46	1.22	0.78	0.75	0.64	0.19
	3	2.15	1.70	0.94	0.78	0.50	0.40	0.34	0.10
	4	1.60	1.28	0.71	0.61	0.40	0.34	0.27	0.08
	5	1.00	0.83	0.47	0.34	0.20	0.24	0.19	0.06
	6	0.82	0.58	0.30	0.27	0.17	0.22	0.18	0.05
CU 900	1	0.86	0.63	0.32	0.30	0.21	-	-	0.05
CU 950	2	1.03	0.80	0.59	0.40	0.26	-	-	0.05
	3	0.44	0.40	0.27	0.18	0.15	-	-	0.02
MR 630	7	0.88	0.78	0.36	0.34	0.16	0.12	0.96	0.47

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm²/s

High pressure filters

Filter element		Absolute filtration N - R Series					Nominal filtration N Series
Type		A03	A06	A10	A16	A25	M25
HP 011	1	332.71	250.07	184.32	152.36	128.36	-
	2	220.28	165.56	74.08	59.13	37.05	-
	3	123.24	92.68	41.48	33.08	20.72	-
	4	77.76	58.52	28.37	22.67	16.17	-
HP 039	2	70.66	53.20	25.77	20.57	14.67	4.90
	3	36.57	32.28	18.00	13.38	8.00	2.90
	4	26.57	23.27	12.46	8.80	5.58	2.20
HP 050	1	31.75	30.30	13.16	12.3	7.29	1.60
	2	24.25	21.26	11.70	9.09	4.90	1.40
	3	17.37	16.25	8.90	7.18	3.63	1.25
	4	12.12	10.75	6.10	5.75	3.08	1.07
	5	7.00	6.56	3.60	3.10	2.25	0.80
HP 065	1	58.50	43.46	23.16	19.66	10.71	1.28
	2	42.60	25.64	16.22	13.88	7.32	1.11
	3	20.50	15.88	8.18	6.81	3.91	0.58
HP 135	1	20.33	18.80	9.71	8.66	4.78	2.78
	2	11.14	10.16	6.60	6.38	2.22	1.11
	3	6.48	6.33	3.38	3.16	2.14	1.01
HP 150	1	17.53	15.91	7.48	6.96	5.94	1.07
	2	8.60	8.37	3.54	3.38	3.15	0.58
	3	6.53	5.90	2.93	2.79	2.12	0.49
HP 320	1	10.88	9.73	5.02	3.73	2.54	1.04
	2	4.40	3.83	1.75	1.48	0.88	0.71
	3	2.75	2.11	1.05	0.87	0.77	0.61
	4	2.12	1.77	0.98	0.78	0.55	0.47
HP 500	1	4.44	3.67	2.30	2.10	1.65	0.15
	2	3.37	2.77	1.78	1.68	1.24	0.10
	3	2.22	1.98	1.11	1.09	0.75	0.08
	4	1.81	1.33	0.93	0.86	0.68	0.05
	5	1.33	1.15	0.77	0.68	0.48	0.04

Filter element		Absolute filtration N Series					Nominal filtration N Series
Type		A03	A06	A10	A16	A25	M25
HF 320	1	3.65	2.95	2.80	1.80	0.90	0.38
	2	2.03	1.73	1.61	1.35	0.85	0.36
	3	1.84	1.42	1.32	1.22	0.80	0.35

Suction filters

Filter element		Nominal filtration N Series	
Type		P10	P25
SF 250		65	21

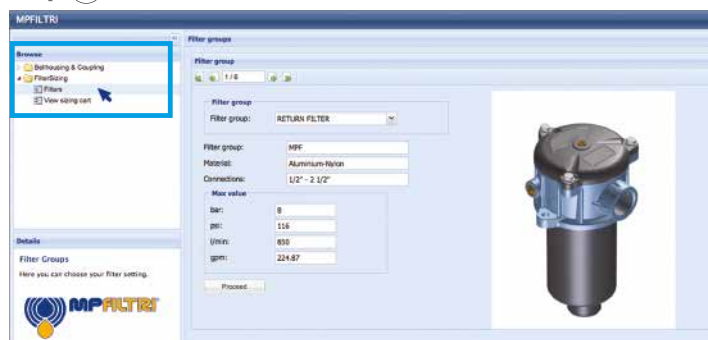
Stainless steel high pressure filters

Filter element		Absolute filtration N Series				
Type		A03	A06	A10	A16	A25
HP 011	1	332.71	250.07	184.32	152.36	128.36
	2	220.28	165.56	74.08	59.13	37.05
	3	123.24	92.68	41.48	33.08	20.72
	4	77.76	58.52	28.37	22.67	16.17
HP 039	2	70.66	53.20	25.77	20.57	14.67
	3	36.57	32.28	18.00	13.38	8.00
	4	26.57	23.27	12.46	8.80	5.58
HP 050	1	31.75	30.30	13.16	12.3	7.29
	2	24.25	21.26	11.70	9.09	4.90
	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25
HP 135	1	20.33	18.80	9.71	8.66	4.78
	2	11.14	10.16	6.60	6.38	2.22
	3	6.48	6.33	3.38	3.16	2.14

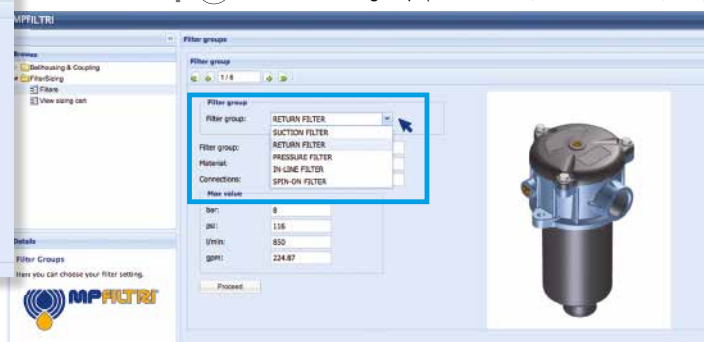
Filter element		Absolute filtration H - U Series				
Type		A03	A06	A10	A16	A25
HP 011	1	424.58	319.74	235.17	194.44	163.78
	2	281.06	211.25	94.53	75.45	47.26
	3	130.14	97.50	43.63	34.82	21.81
	4	109.39	82.25	36.79	29.37	18.40
HP 039	2	73.00	57.00	28.00	24.00	17.20
	3	40.90	36.33	21.88	18.80	11.20
	4	31.50	28.22	17.22	9.30	6.70
HP 050	1	47.33	34.25	21.50	20.50	14.71
	2	29.10	25.95	14.04	10.90	5.88
	3	20.85	19.50	10.68	8.61	4.36
	4	14.55	12.90	7.32	6.90	3.69
	5	9.86	9.34	6.40	4.80	2.50
HP 135	1	29.16	25.33	13.00	12.47	5.92
	2	14.28	11.04	7.86	7.60	4.44
	3	8.96	7.46	4.89	4.16	3.07

FILTER SIZING Selection Software

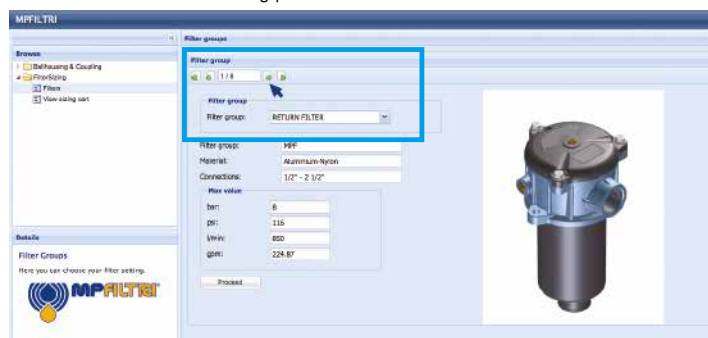
Step 1 Select "FILTERS"



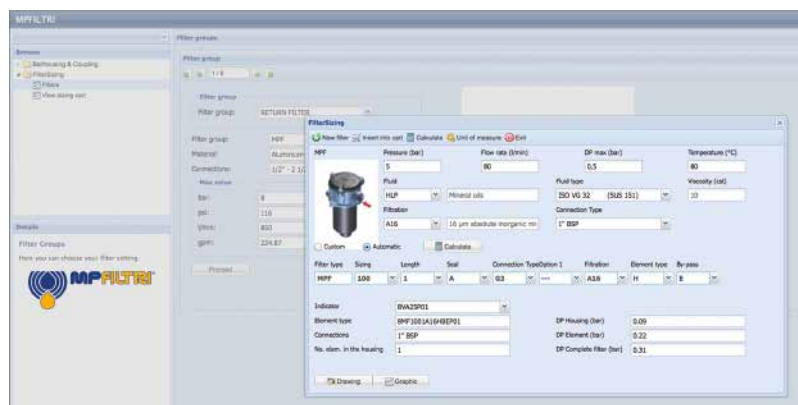
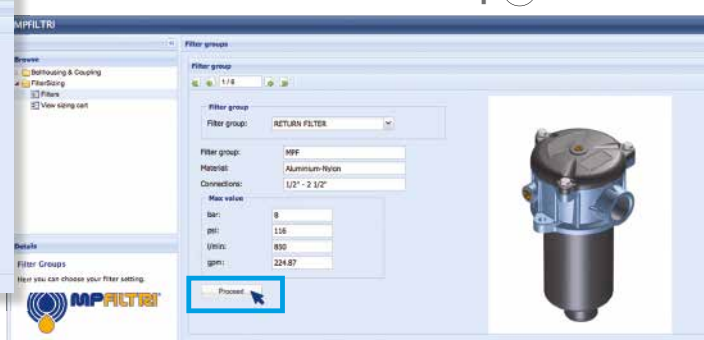
Step 2 Choose filter group (Return Filter, Pressure Filter, etc.)



Step 3 Choose filter type (MPF, MPT, etc.) in function of the max working pressure and the max flow rate



Step 4 Push "PROCEED"



Step 5

Insert all application data to calculate the filter size following the sequence:

- working pressure
- working flow rate
- working pressure drop
- working temperature
- fluid material and fluid type
- filtration media
- connection type

Step 6

Push "CALCULATE" to have result; in case of any mistake, the system will advice which parameter is out of range to allow to modify/adjust the selection



Step 7

Download PDF Datasheet "Report.aspx" pushing the button "Drawing"

FHP series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 750 l/min



High Pressure filters

In-line

Maximum working pressure up to 42 MPa (420 bar)

Flow rate up to 750 l/min

FHP is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the industrial equipment.

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

Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 2", for a maximum return flow rate of 750 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
- Check valve, to protect the system against reverse flow
- Reverse flow valve, to allow bidirectional flow through the filter housing. The back flow is not filtered. The filter requires the use of internal check valves to direct the flow through the element in one direction and around the element in the other
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not 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 or the reverse flow 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 or the reverse flow in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any high pressure industrial equipment or mobile machines

Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve
AISI 316L: FHP 010 - 011
Brass: FHP 065 - 135
Brass / AISI 304: FHP 350
Steel: FHP 500
- Reverse Flow
Steel: FHP 350 - FHP 500

- Check 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) ±10%
- Other opening pressures on request.

Δp element type

- Microfibre filter elements - series N: 20 bar
- Microfibre filter elements - series R: 20 bar (not available for FHP 010-011 and FHP 500)
- Microfibre filter elements - series H: 210 bar
- Microfibre filter elements - series S: 210 bar (only for 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

Temperature

From -25 °C to +110 °C

Connections

FHP 010 - 065 - 135 - 350 - 500:

In-line Inlet/Outlet

FHP 011:

90° Inlet/Outlet

Note

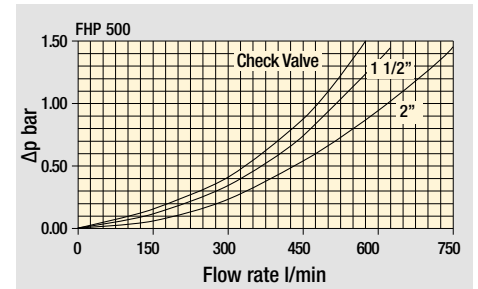
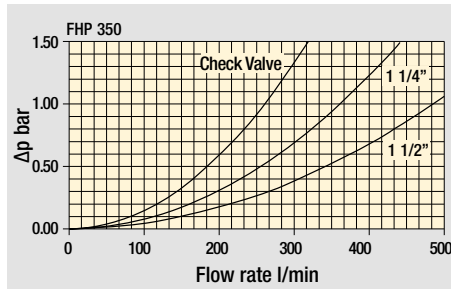
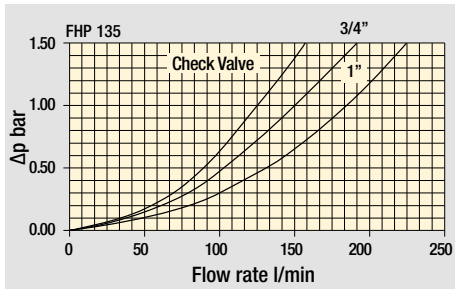
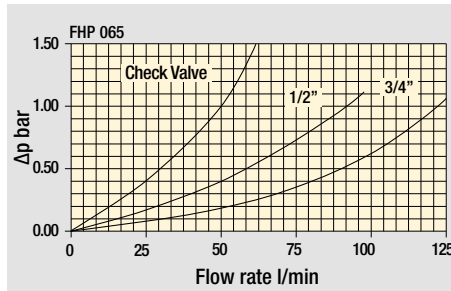
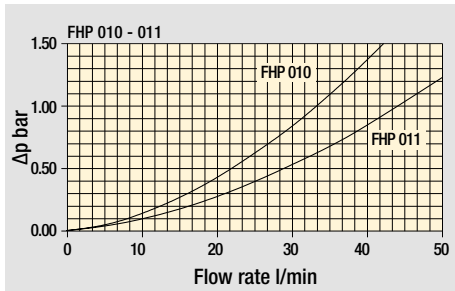
FHP filters are provided for vertical mounting



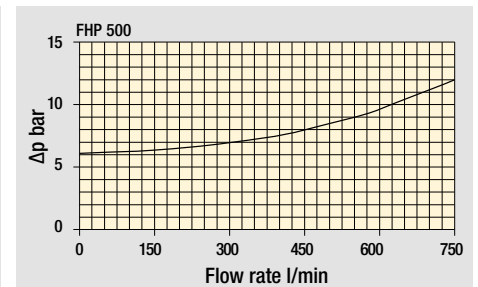
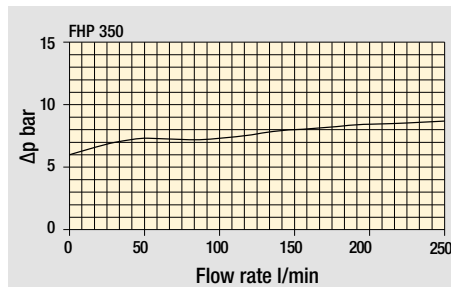
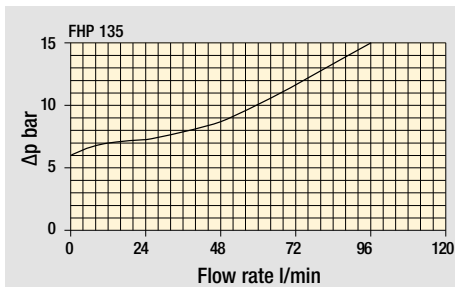
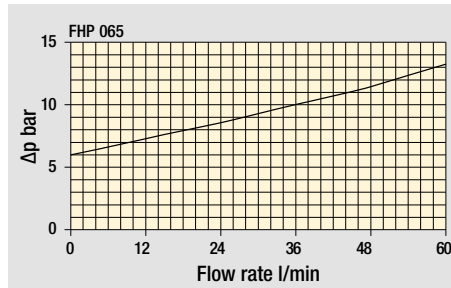
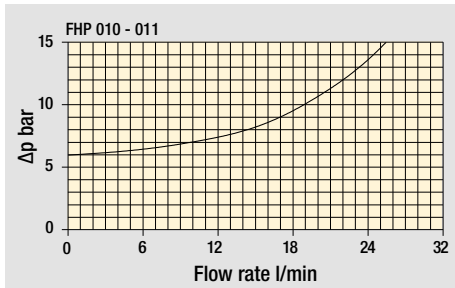
Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]						
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHP 010 - 011		2.05	2.18	2.64	3.13	-		0.10	0.12	0.15	0.20	-
FHP 065		4.26	4.62	5.83	-	-		0.25	0.30	0.50	-	-
FHP 135		7.11	8.71	9.76	-	-		0.43	0.76	0.97	-	-
FHP 350		13.95	16.08	18.37	20.85	-		1.00	1.72	2.49	3.32	-
FHP 500		27.00	31.17	34.69	46.70	52.5		1.71	2.43	3.04	5.18	6.51

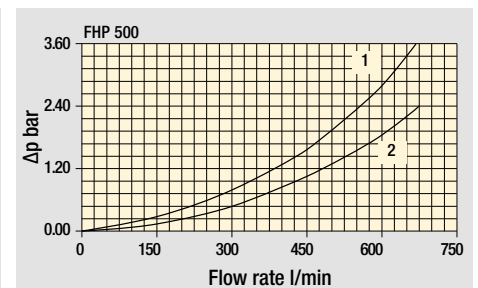
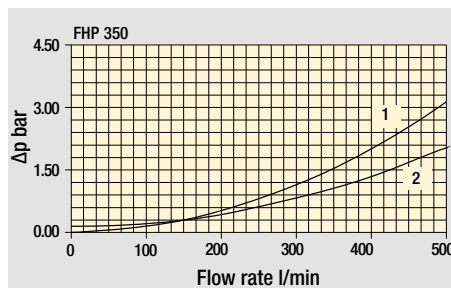
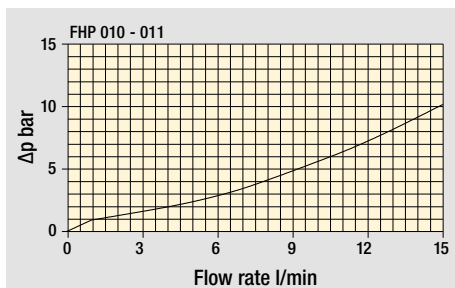
Filter housings Δp pressure drop



Bypass valve pressure drop



Valves



Filter housing with check valve

Pressure drop with reverse flow valve in

- 1 - Filtering direction
- 2 - Opposite direction

Pressure drop with reverse flow valve in

- 1 - Opposite direction
- 2 - Filtering direction

The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
 Δp varies proportionally with density.

FHP GENERAL INFORMATION

Flow rates [l/min]

Filter series	Length	Filter element design - H Series					Filter element design - N Series					
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25	M25
FHP 010	1	3	5	6	7	8	4	6	8	9	10	37
	2	5	7	13	16	22	6	8	16	19	24	40
	3	10	13	22	25	30	11	14	23	26	31	41
	4	12	15	25	27	32	16	19	27	30	33	41
FHP 011	1	3	5	6	7	9	4	6	8	9	11	47
	2	5	7	14	17	24	7	9	17	21	28	52
	3	11	14	25	29	36	11	14	26	30	37	53
	4	12	16	28	32	38	17	21	32	36	40	54
FHP 065	1	24	25	50	59	84	25	33	56	63	90	142
	2	33	38	68	77	98	34	52	72	79	106	143
	3	61	70	100	107	123	61	73	101	108	125	147
FHP 135	1	49	55	95	98	147	67	72	115	122	159	184
	2	89	106	129	131	163	105	111	140	142	192	209
	3	120	132	158	166	180	141	143	176	179	193	211
FHP 350	1	108	115	188	197	301	127	140	234	282	343	451
	2	196	225	317	323	396	256	278	394	415	465	480
	3	266	310	384	392	440	331	370	450	466	475	490
	4	308	333	391	398	445	369	393	456	474	495	503
FHP 500	1	144	157	265	268	355	269	305	390	406	444	612
	2	232	262	350	363	398	321	357	433	441	484	619
	3	293	301	398	408	455	396	416	497	499	537	622
	4	336	377	452	455	507	430	475	516	524	545	626
	5	420	428	494	500	544	475	493	535	545	569	627

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

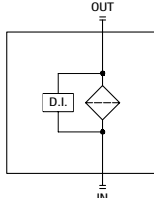
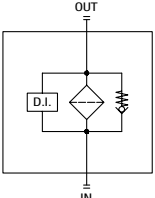
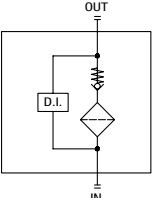
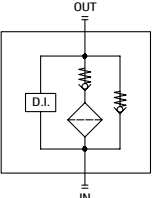
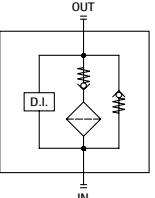
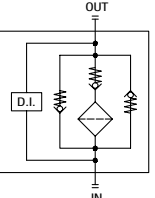
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

Please, contact our Sales Department for further additional information.

Hydraulic symbols

Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FHP 010 - 011	•	•			•	•
FHP 065	•	•	•			
FHP 135	•	•	•			
FHP 350	•	•	•	•	•	•
FHP 500	•	•	•	•	•	•

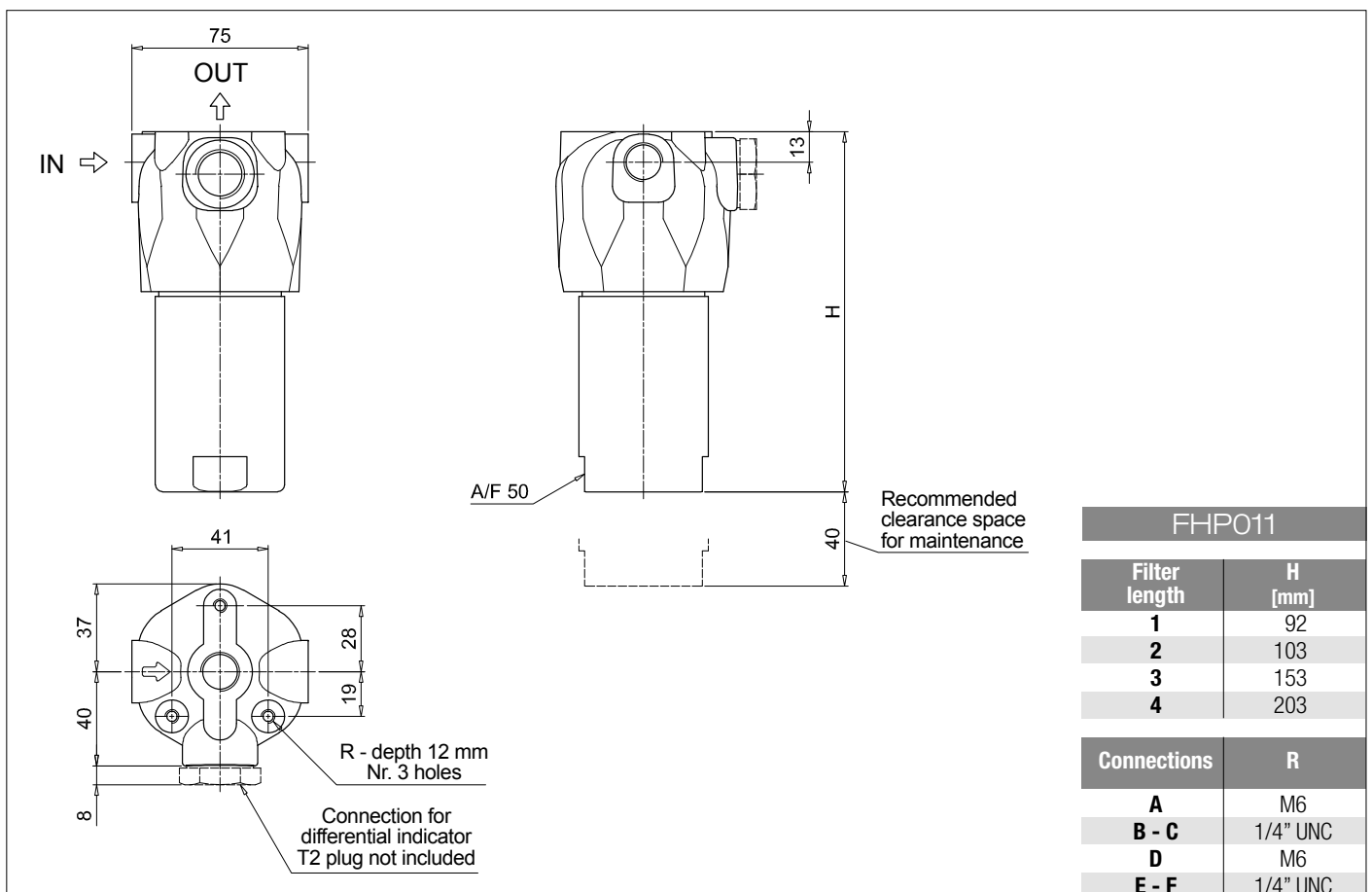
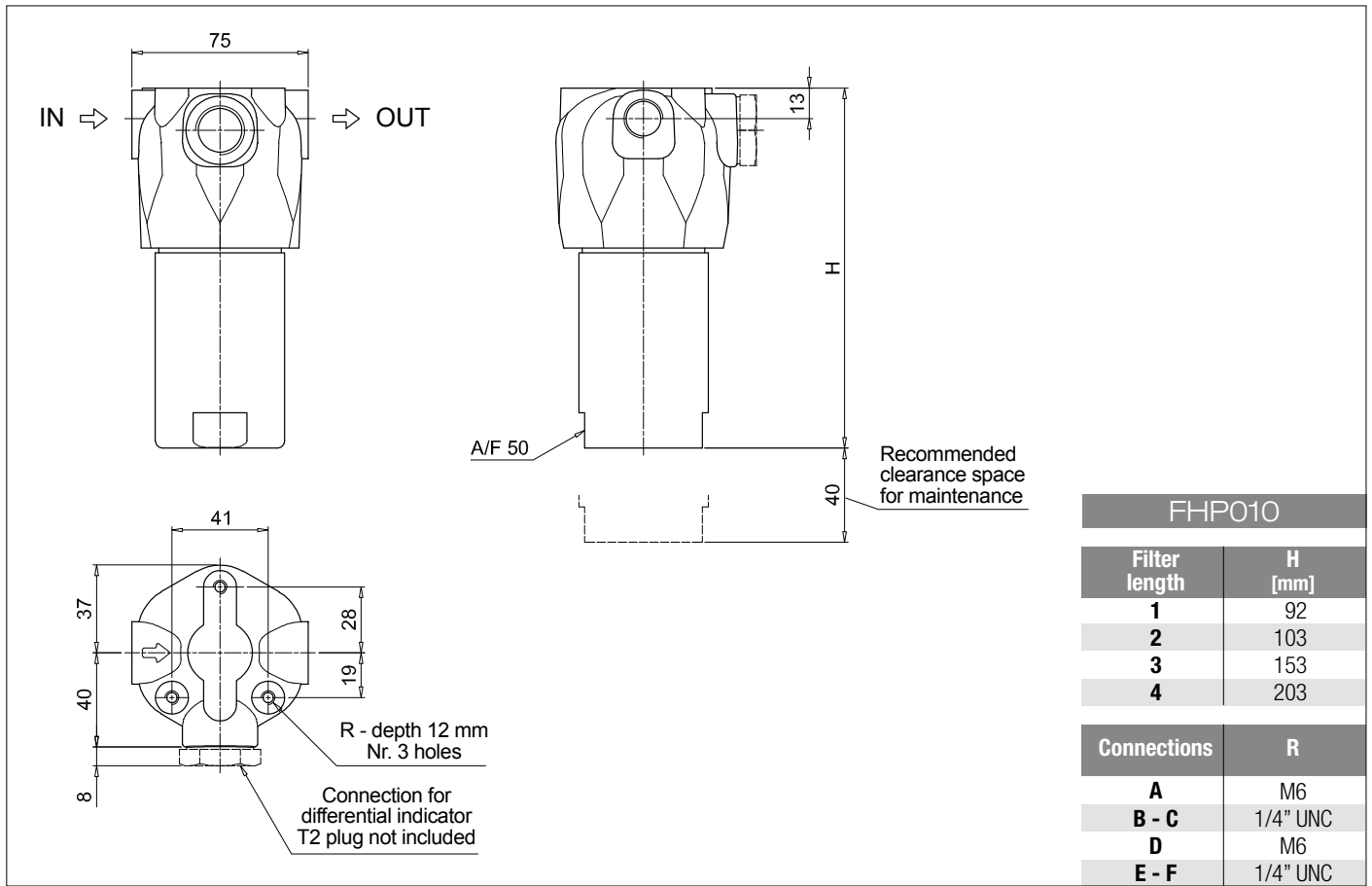
					
---	---	---	--	---	---

FHP FHP010 - FHP011

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example: FHP010										2	B	A	B	2	A03	N	P01	
FHP010 FHP011																				
Length																				
1 2 3 4																				
Valves																				
S Without bypass																				
B With bypass 6 bar																				
V With reverse flow, without bypass																				
Z With reverse flow, with bypass 6 bar																				
Seals																				
A NBR																				
V FPM																				
Connections																				
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																				
Connection for differential indicator																				
1 Without																				
2 With 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																		
				Valves														Execution		
Element Δp		S		B		V		Z								P01 MP Filtri standard				
N 20 bar				•				•								Pxx Customized				
H 210 bar		•				•														



FHP FHP065 - FHP135

Designation & Ordering code

COMPLETE FILTER

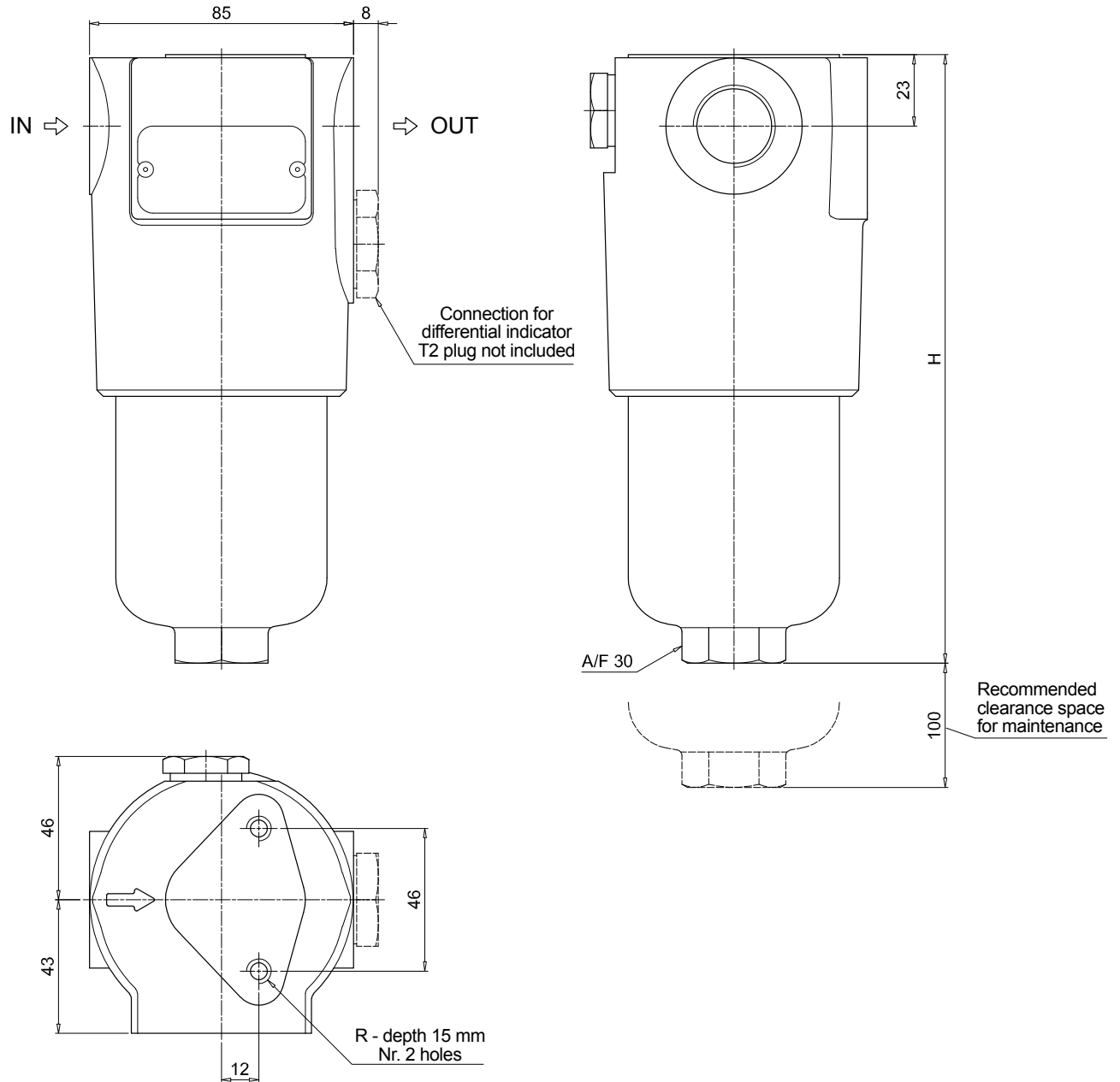
Series and size		Configuration example: FHP135 2 B A G3 A06 S P01									
FHP065 FHP135											
Length											
1											
2											
3											
Valves											
S Without bypass											
B With bypass 6 bar											
T With check valve, without bypass											
Seals											
A NBR											
V FPM											
Connections	FHP065	FHP135									
G1	G 1/2"	G 3/4"									
G2	G 3/4"	G 1"									
G3	1/2" NPT	3/4" NPT									
G4	3/4" NPT	1" NPT									
G5	SAE 8 - 3/4" - 16 UNF	SAE 12 - 1 1/16" - 12 UN									
G6	SAE 12 - 1 1/16" - 12 UN	SAE 16 - 1 5/16" - 12 UN									
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									
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						Execution		
			Element Δp	S	B	T	D	V	Z	P01 MP Filtri standard	
			N 20 bar		•					Pxx Customized	
			R 20 bar				•		•		
			H 210 bar	•							
			S 210 bar			•		•			

FILTER ELEMENT

Element series and size		Configuration example: HP135 2 A06 A S P01								
HP065 HP135										
Element length										
1										
2										
3										
Filtration rating (filter media)		Seals				Element Δp		Execution		
A03	Inorganic microfiber	3 µm	A16	Inorganic microfiber	16 µm	A	NBR	N	20 bar	P01 MP Filtri standard
A06	Inorganic microfiber	6 µm	A25	Inorganic microfiber	25 µm	V	FPM	R	20 bar	Pxx Customized
A10	Inorganic microfiber	10 µm	M25	Wire mesh	25 µm			H	210 bar	
								S	210 bar	

ACCESSORIES

Differential indicators	page			page
DEA Electrical differential indicator	567	DLE Electrical / visual differential indicator		570
DEH Hazardous area electronic differential indicator	567-568	DTA Electronic differential indicator		571
DEM Electrical differential indicator	568-569	DVA Visual differential indicator		571
DLA Electrical / visual differential indicator	569-570	DVM Visual differential indicator		571
Additional features	page			
T2 Plug	572			

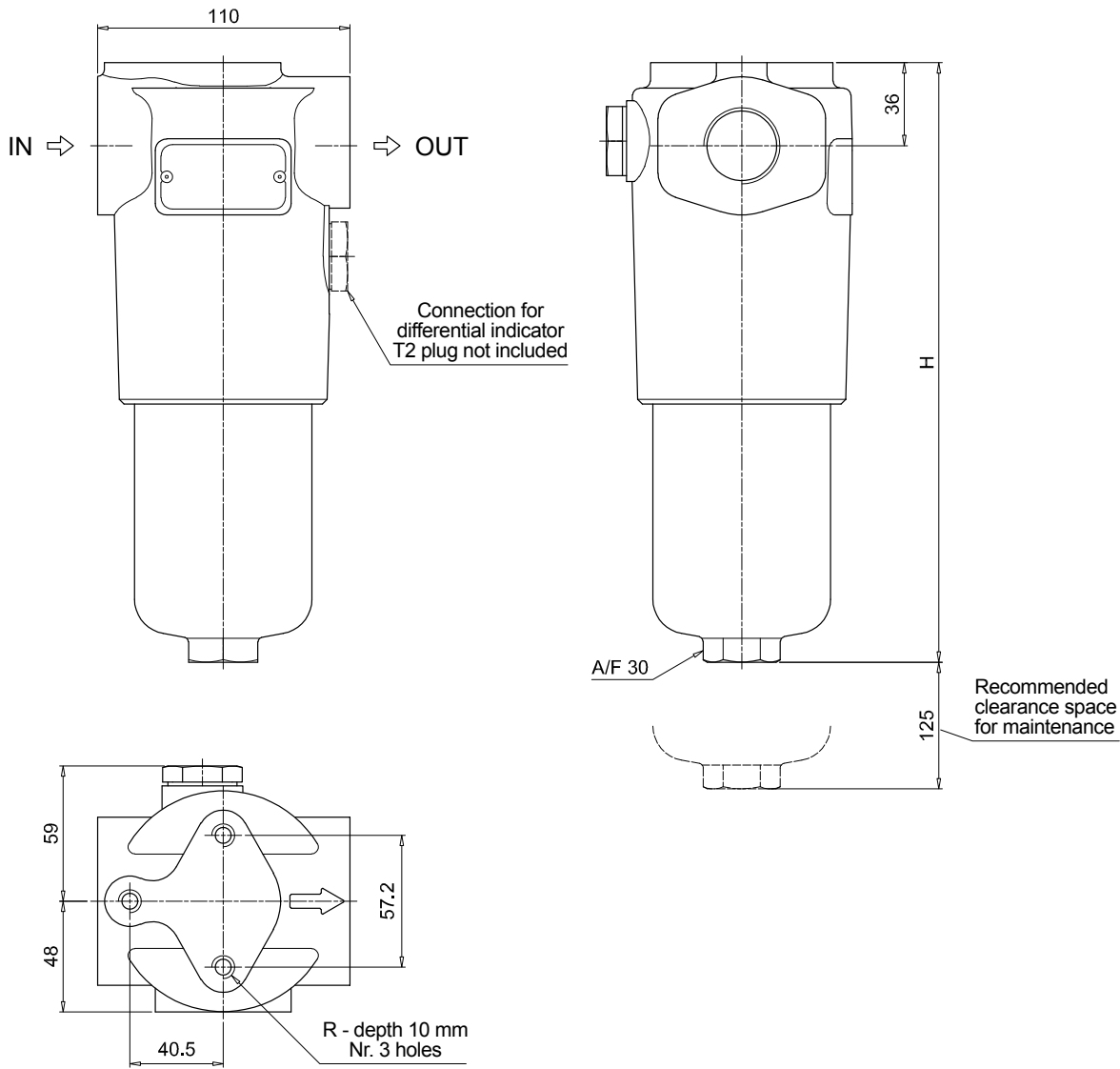


FHP065

Filter length	H [mm]
1	196
2	227
3	329
Connections	R
G1-G2	M8
G3-G4-G5-G6	5/16" UNC

FHP FHP065 - FHP135

Dimensions



FHP135	
Filter length	H [mm]
1	260
2	373
3	448
Connections	R
G1-G2	M10
G3-G4-G5-G6	3/8" UNC
F1-F2	M10
F3-F4	3/8" UNC
F5	M10
F6	3/8" UNC

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example:										FHP350	4	B	A	D	2	A06	N	P01				
Length																								
1		2		3		4																		
Valves																								
S		Without bypass																						
B		With bypass 6 bar																						
T		With check valve, without bypass																						
D		With check valve, with bypass 6 bar																						
V		With reverse flow, without bypass																						
Z		With reverse flow, with bypass 6 bar																						
Seals																								
A		NBR																						
V		FPM																						
Connections																								
A		G 1 1/2"																						
B		1 1/2" NPT																						
C		SAE 24 - 1 7/8" - 12 UN																						
D		1 1/2" SAE 3000 psi/M + G 1 1/4"																						
E		1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT																						
F		1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" - 12 UN																						
G		1 1/4" SAE 3000 psi/M																						
H		1 1/4" SAE 3000 psi/UNC																						
I		1 1/4" SAE 6000 psi/M																						
L		1 1/4" SAE 6000 psi/UNC																						
Connection for differential indicator																								
2		With connection																						
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								Filter length			
Element Δp			S	B	T	D	V	Z																
N 20 bar							•																	
R 20 bar											•				•									
H 210 bar			•																					
S 210 bar							•				•													
Execution																								
P01			MP Filtri standard										•				•							
P02			Maintenance from the bottom of the housing														•							
Pxx			Customized																					

FILTER ELEMENT

Configuration example: **HP320** **4** **A06** **A** **S** **P01**

Element series and size	
HP320	

Element length	
1	2
3	4

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

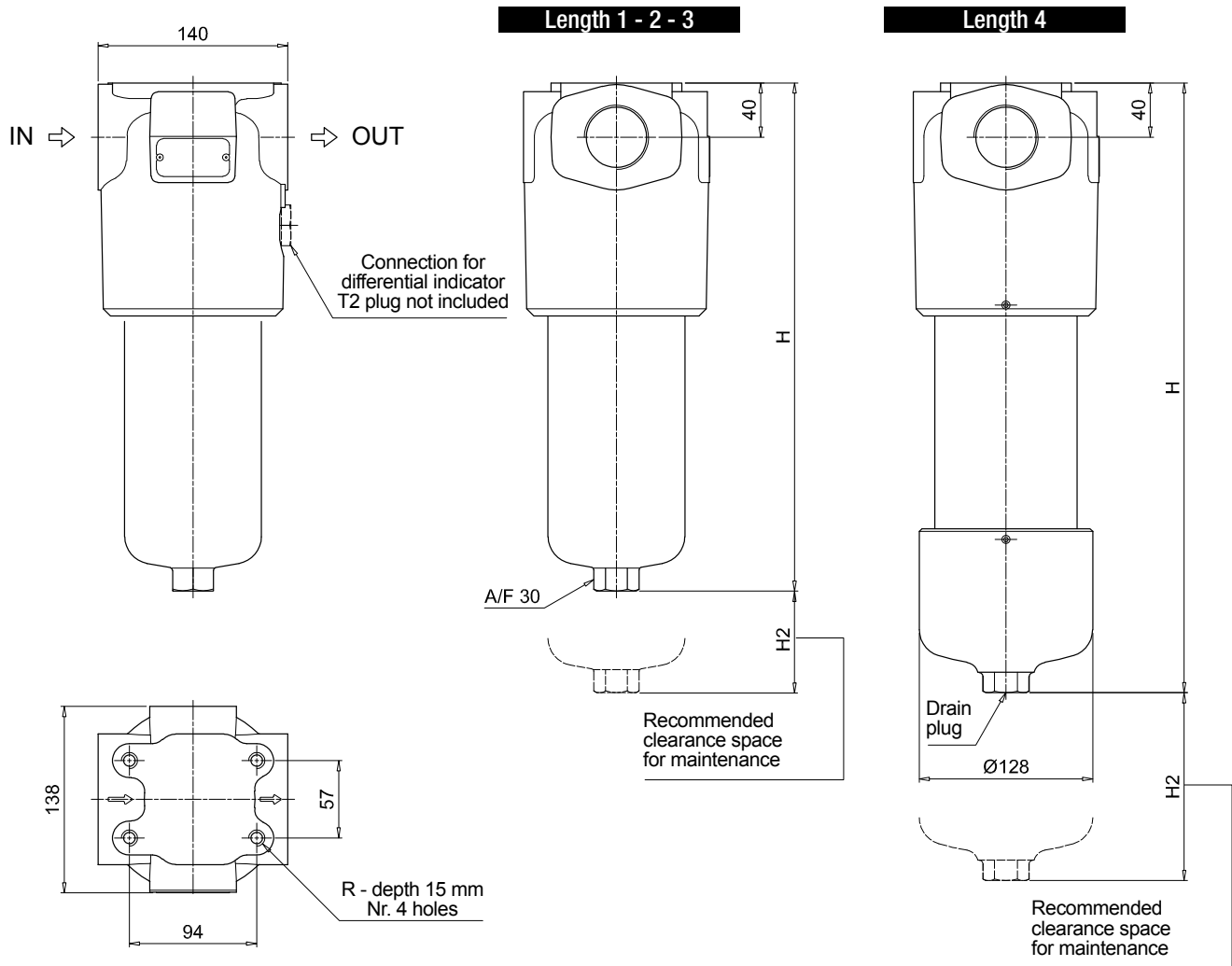
Seals	
A	NBR
V	FPM

Element Δp	
N	20 bar
R	20 bar
H	210 bar
S	210 bar

Execution	
P01	MP Filtri standard
Pxx	Customized

ACCESSORIES

Differential indicators		page			page
DEA	Electrical differential indicator	567	DLE	Electrical / visual differential indicator	570
DEH	Hazardous area electronic differential indicator	567-568	DTA	Electronic differential indicator	571
DEM	Electrical differential indicator	568-569	DVA	Visual differential indicator	571
DLA	Electrical / visual differential indicator	569-570	DVM	Visual differential indicator	571
Additional features		page			
T2	Plug	572			



FHP350

Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
1	295	150	-
2	418	150	-
3	550	150	-
4	703	150	550

Connections	R
A	M12
B - C	1/2" UNC
D	M12
E - F	1/2" UNC
G	M12
H	1/2" UNC
I	M12
L	1/2" UNC

Designation & Ordering code

COMPLETE FILTER

Series and size **FHP500** Configuration example: **FHP500** **4** **V** **A** **G1** **A06** **S** **P01**

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
V With reverse flow, without bypass
Z With reverse flow, with bypass 6 bar

Seals
A NBR
V FPM

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

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

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

Execution	Filter length				
	1	2	3	4	5
P01 MP Filtri standard	•	•	•	•	•
P02 Maintenance from the bottom of the housing				•	•
P03 Drain plug	•	•			
Pxx Customized	•	•	•	•	•

FILTER ELEMENT

Element series and size **HP500** Configuration example: **HP500** **4** **A06** **A** **S** **P01**

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

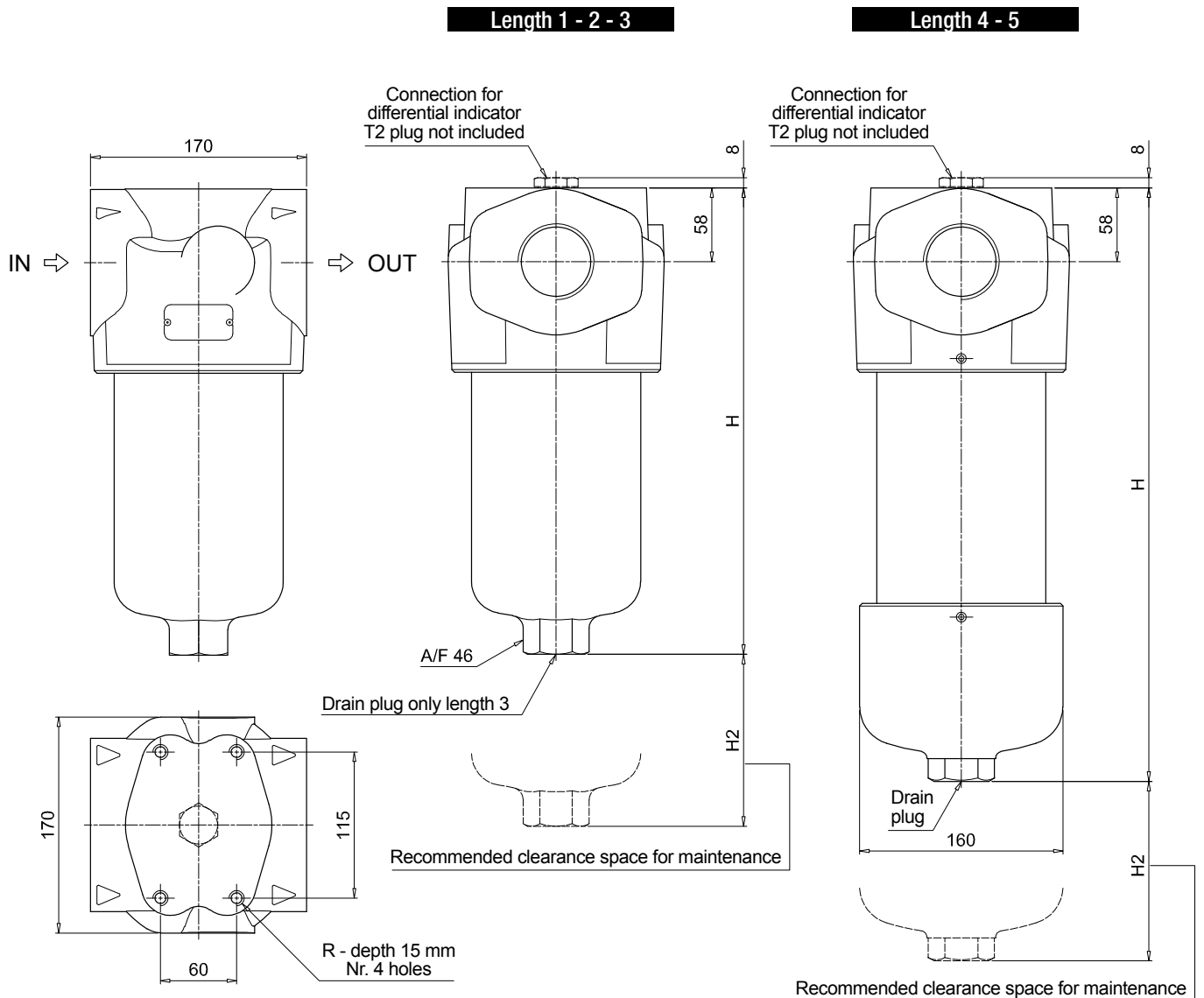
Element Δp	
N	20 bar
R	20 bar
S	210 bar

Execution	
P01	MP Filtri standard
Pxx	Customized

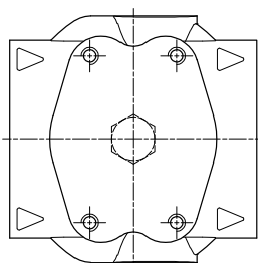
ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	567	DLE Electrical / visual differential indicator	570
DEH Hazardous area electronic differential indicator	567-568	DTA Electronic differential indicator	571
DEM Electrical differential indicator	568-569	DVA Visual differential indicator	571
DLA Electrical / visual differential indicator	569-570	DVM Visual differential indicator	571

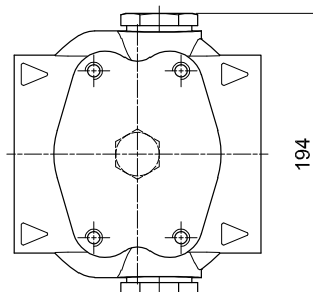
Additional features	page
T2 Plug	572



Valves S - B - T - D



Valves V - Z



FHP500

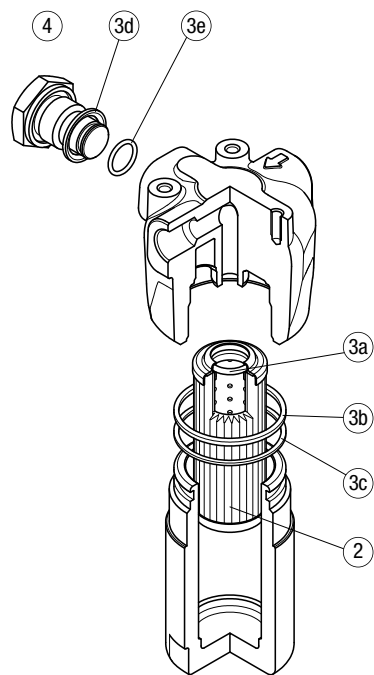
Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
1	330	150	-
2	420	150	-
3	496	150	-
4	654	150	480
5	820	150	650

Connections	R
G1	M12
G2-G3	1/2" UNC
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC
F5	M12
F6	1/2" UNC
F7	M12
F8	1/2" UNC

FHP SPARE PARTS

Order number for spare parts

FHP 010 - 011

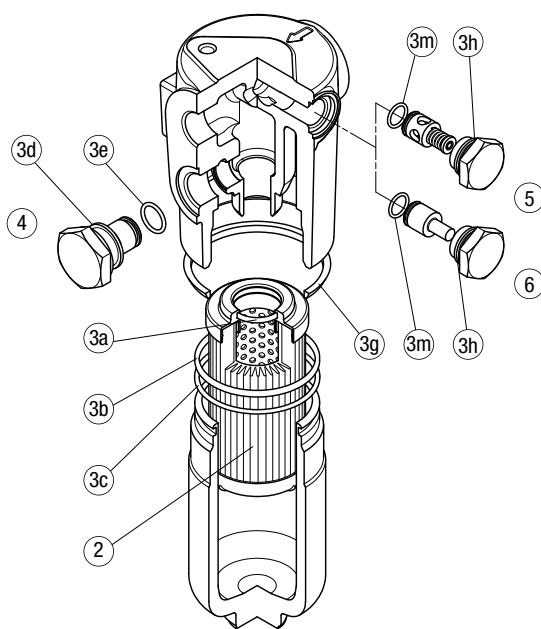


Q.ty:
nr. 0 pcs. for version 1
(without indicator port)

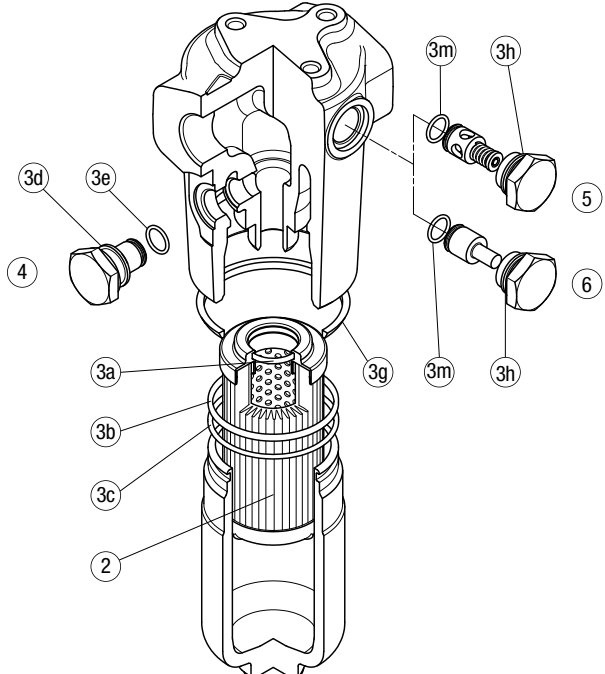
nr. 1 pc. for version 2
(with indicator port)

Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:		2		3 (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FHP 010-011	See order table	02050501	02050492	T2H	T2V

FHP 065

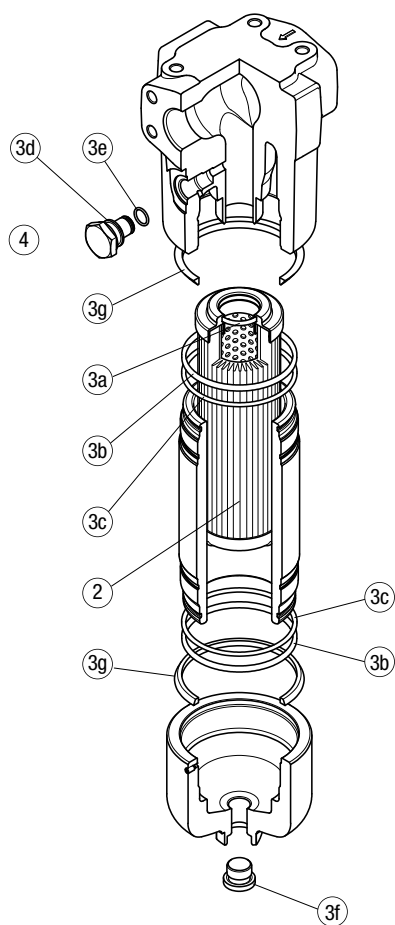


FHP 135

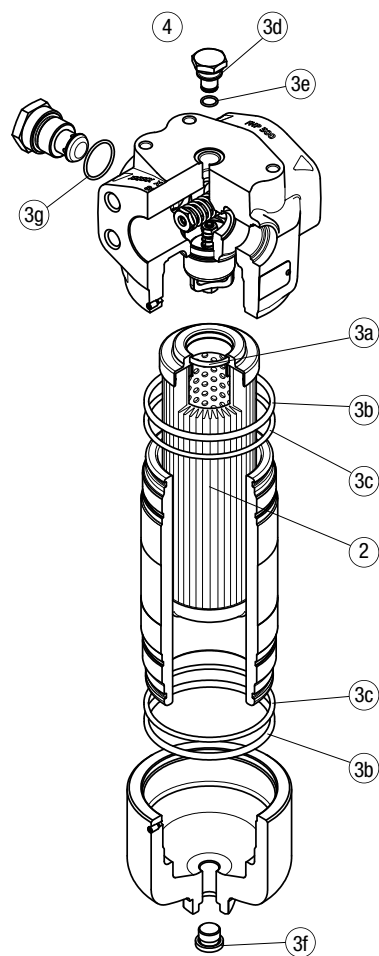


Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:		2		3 (3a ÷ 3m)		4		5	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		Bypass assembly		Non-bypass assembly	
		NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM
FHP 065	See order table	02050265	02050276	T2H	T2V	02001116	02001136	02001142	02001139
FHP 135	See order table	02050269	02050280			02001117	02001137	02001143	02001392

FHP 350



FHP 500



Q.ty: 1 pc.		Q.ty: 1 pc. (3a ÷ 3g for FHP 350) (3a ÷ 3f for FHP 500)		Q.ty: 1 pc.	
Item:	2	3		4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FHP 350	See order table	02050786	02050787	T2H	T2V
FHP 500		02050330	02050331		