

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 - 320
Steel: FHP 500
- Reverse Flow
Steel: FHP 320 - 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 - 500:
In-line Inlet/Outlet
FHP 011 - 320:
90° Inlet/Outlet

Note

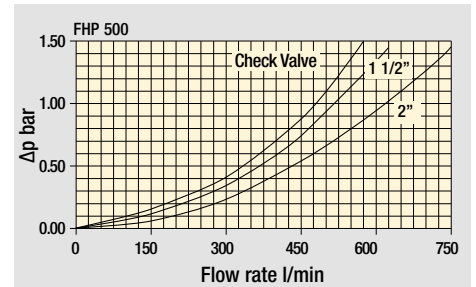
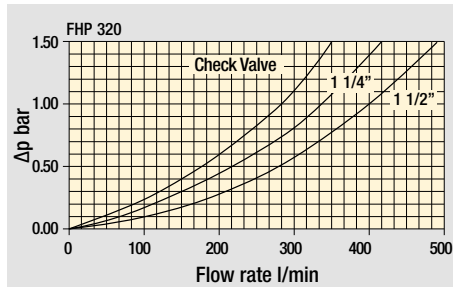
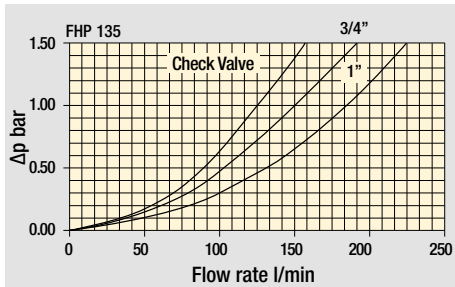
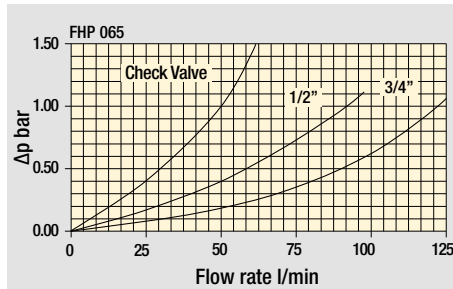
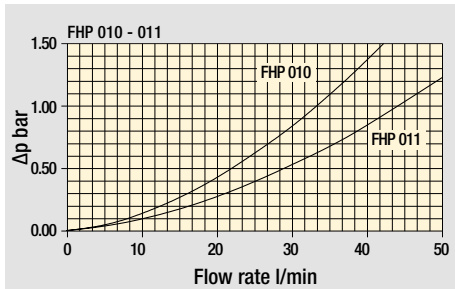
FHP filters are provided for vertical mounting



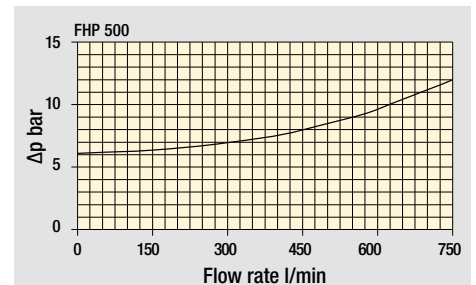
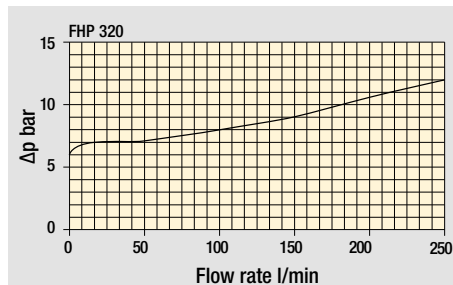
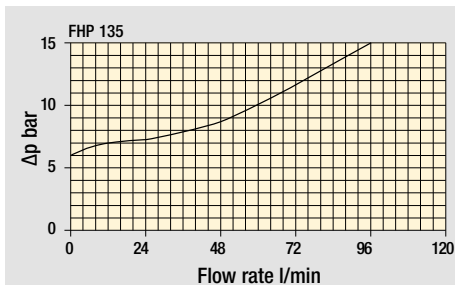
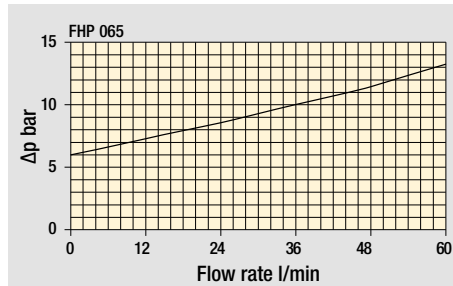
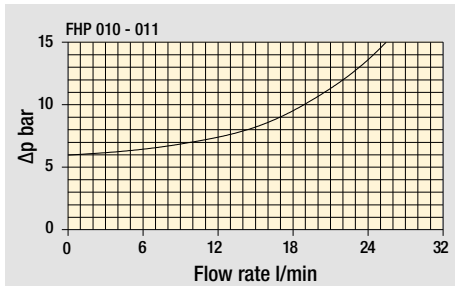
Weights [kg] and volumes [dm³]

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 320		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

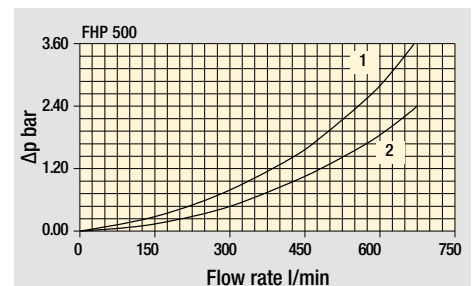
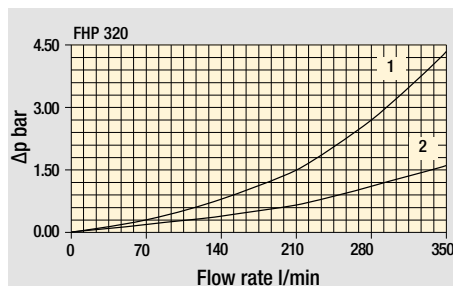
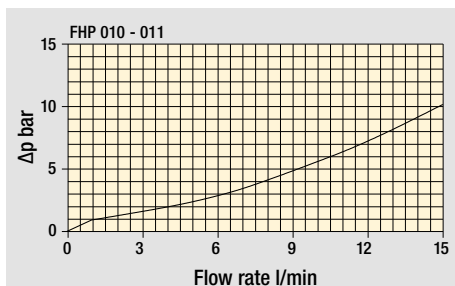
Filter housings Δp pressure drop



Bypass valve pressure drop



Valves



Filter housing with check valve

Pressure drop in reverse flow valves

Pressure drop in reverse flow valves

- 1 - Reverse flow
- 2 - In filter 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 320	1	97	102	156	162	228	112	121	187	217	253	313
	2	161	181	238	241	283	200	214	282	294	321	330
	3	207	234	276	281	307	246	268	313	322	327	335
	4	233	247	280	284	311	268	281	316	326	338	342
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 320	•	•	•	•	•	•
FHP 500	•	•	•	•	•	•

FHP FHP010 - FHP011

Designation & Ordering code

COMPLETE FILTER

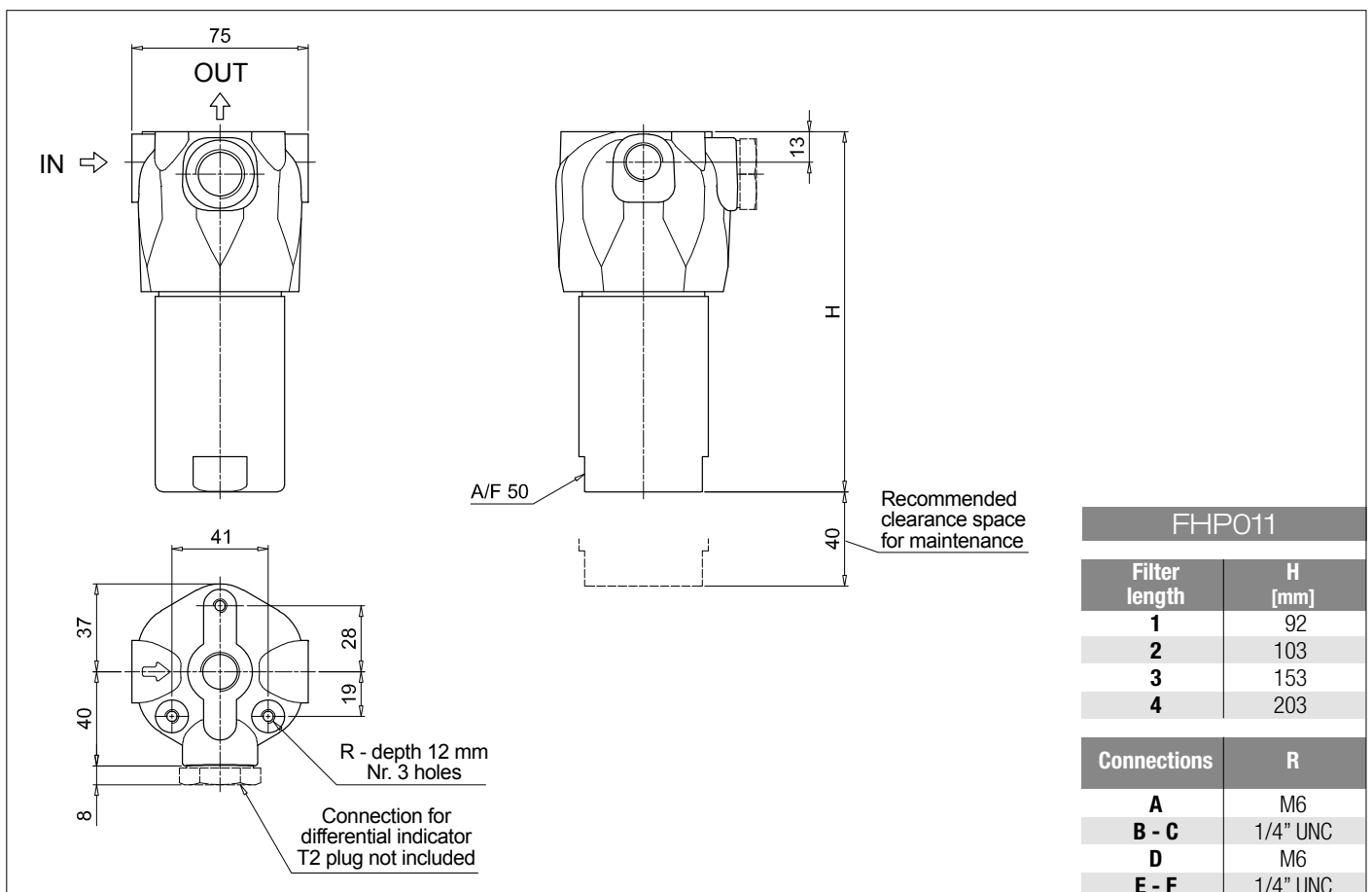
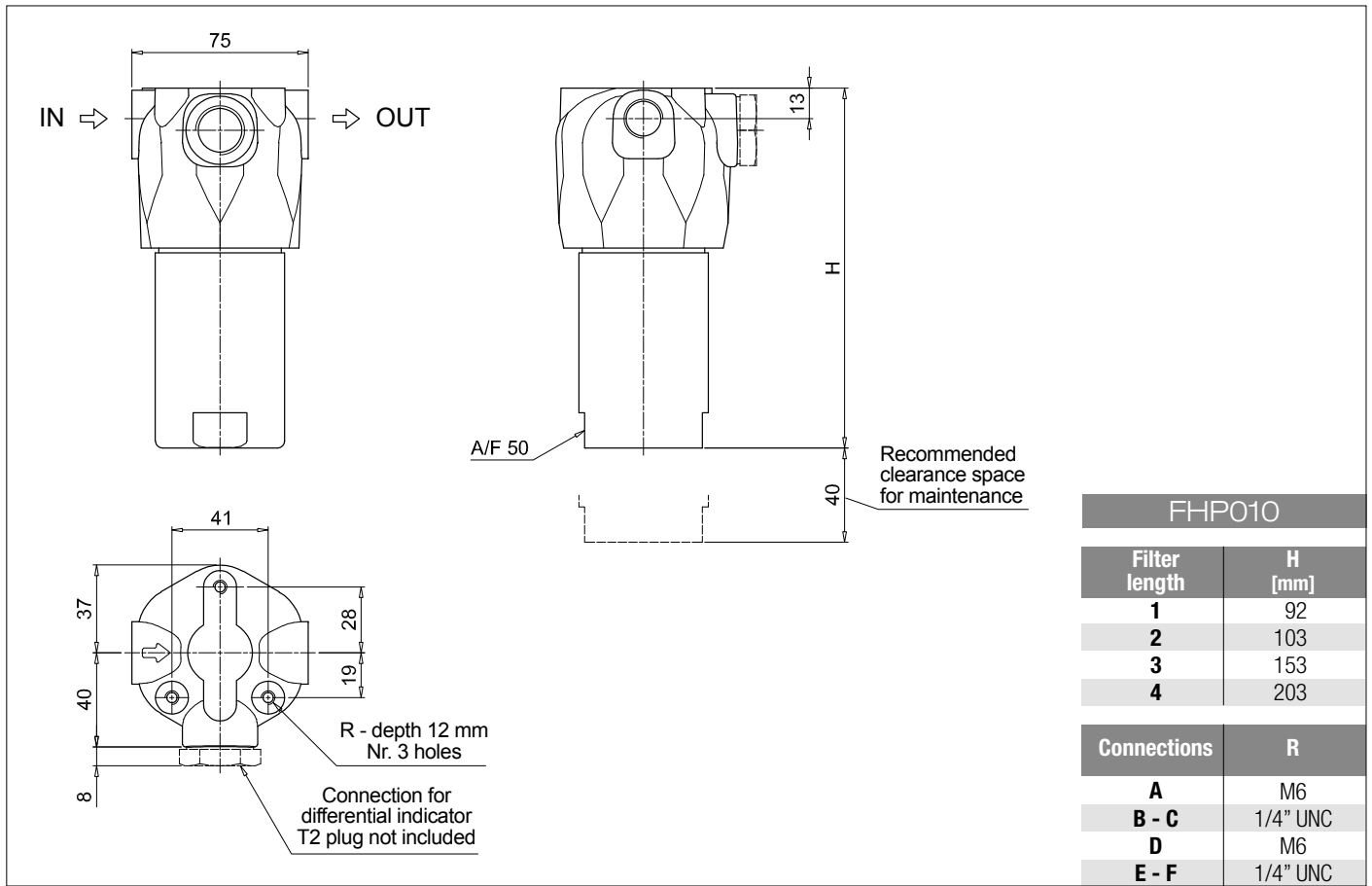
Series and size	Configuration example: FHP010	2	B	A	B	2	A03	N	P01
FHP010 FHP011									
Length									
1 2 3 4									
Valves									
S Without bypass									
B With bypass 6 bar									
V With reverse flow, without bypass									
Z With reverse flow, with bypass 6 bar									
Seals									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

FILTER ELEMENT

Element series and size	Configuration example: HP011	2	A03	A	N	P01
HP011						
Element length						
1 2 3 4						
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					
Seals						
A NBR						
V FPM						
Element Δp		Execution				
N 20 bar		P01 MP Filtri standard				
H 210 bar		Pxx Customized				

ACCESSORIES

Differential indicators		page			page
DEA	Electrical differential indicator	563	DLE	Electrical / visual differential indicator	566
DEH	Hazardous area electronic differential indicator	563-564	DTA	Electronic differential indicator	567
DEM	Electrical differential indicator	564-565	DVA	Visual differential indicator	567
DLA	Electrical / visual differential indicator	565-566	DVM	Visual differential indicator	567
Additional features		page			
T2	Plug	568			



FHP FHP065 - FHP135 - FHP320

Designation & Ordering code

COMPLETE FILTER

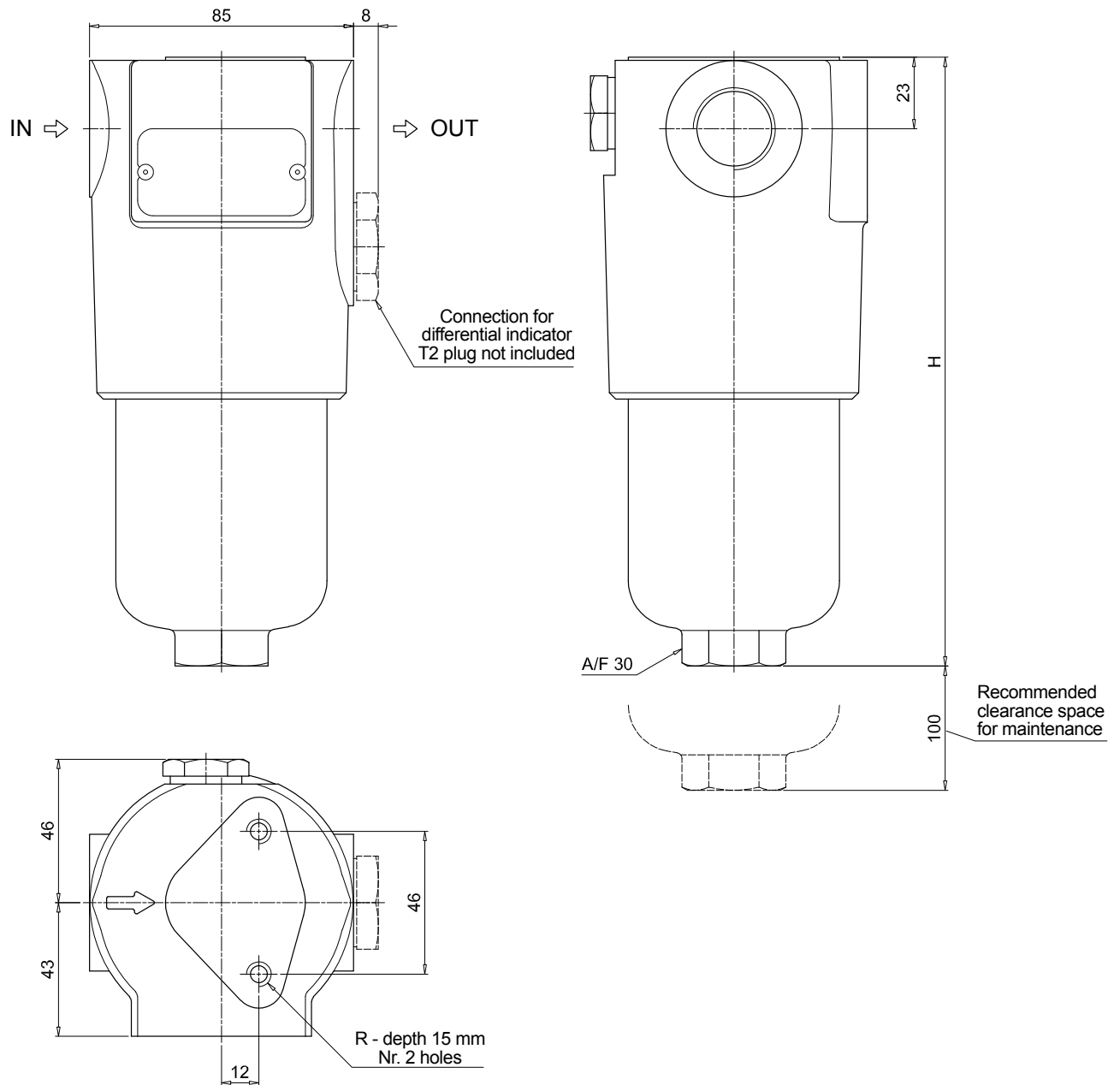
Series and size				Configuration example: FHP320 4 V A G1 A06 S P01															
FHP065 FHP135 FHP320																			
Length				FHP065	FHP135	FHP320													
1				•	•	•													
2				•	•	•													
3				•	•	•													
4						•													
Valves				FHP065	FHP135	FHP320													
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		FHP065	FHP135	FHP320															
G1	G 1/2"		G 3/4"	G 1 1/4"															
G2	G 3/4"		G 1"	G 1 1/2"															
G3	1/2" NPT		3/4" NPT	1 1/4" NPT															
G4	3/4" NPT		1" NPT	1 1/2" NPT															
G5	SAE 8 - 3/4" - 16 UNF		SAE 12 - 1 1/16" - 12 UN	SAE 20 - 1 5/8" - 12 UN															
G6	SAE 12 - 1 1/16" - 12 UN		SAE 16 - 1 5/16" - 12 UN	SAE 24 - 1 7/8" - 12 UN															
F1	-		3/4" SAE 3000 psi/M	1 1/4" SAE 3000 psi/M															
F2	-		1" SAE 3000 psi/M	1 1/2" SAE 3000 psi/M															
F3	-		3/4" SAE 3000 psi/UNC	1 1/4" SAE 3000 psi/UNC															
F4	-		1" SAE 3000 psi/UNC	1 1/2" SAE 3000 psi/UNC															
F5	-		3/4" SAE 6000 psi/M	1 1/4" SAE 6000 psi/M															
F6	-		3/4" SAE 6000 psi/UNC	1 1/4" 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																	
Element Δp			Valves							Execution						Filter length			
			S	B	T	D	V	Z					1	2	3	4			
N	20 bar			•						P01	MP Filtri standard		•	•	•	•			
R	20 bar						•		•	P02	Maintenance from the bottom of the housing					•			
H	210 bar		•							Pxx	Customized								
S	210 bar				•			•											

FILTER ELEMENT

Element series and size				Configuration example: HP320 4 A06 A S P01			
HP065 HP135 HP320							
Element length	HP065	HP135	HP320				
1	•	•	•				
2	•	•	•				
3	•	•	•				
4			•				
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		
				Seals		Element Δp	
				A	NBR	N	20 bar
				V	FPM	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		563	DLE	Electrical / visual differential indicator		566
DEH	Hazardous area electronic differential indicator		563-564	DTA	Electronic differential indicator		567
DEM	Electrical differential indicator		564-565	DVA	Visual differential indicator		567
DLA	Electrical / visual differential indicator		565-566	DVM	Visual differential indicator		567
Additional features			page				
T2	Plug		568				

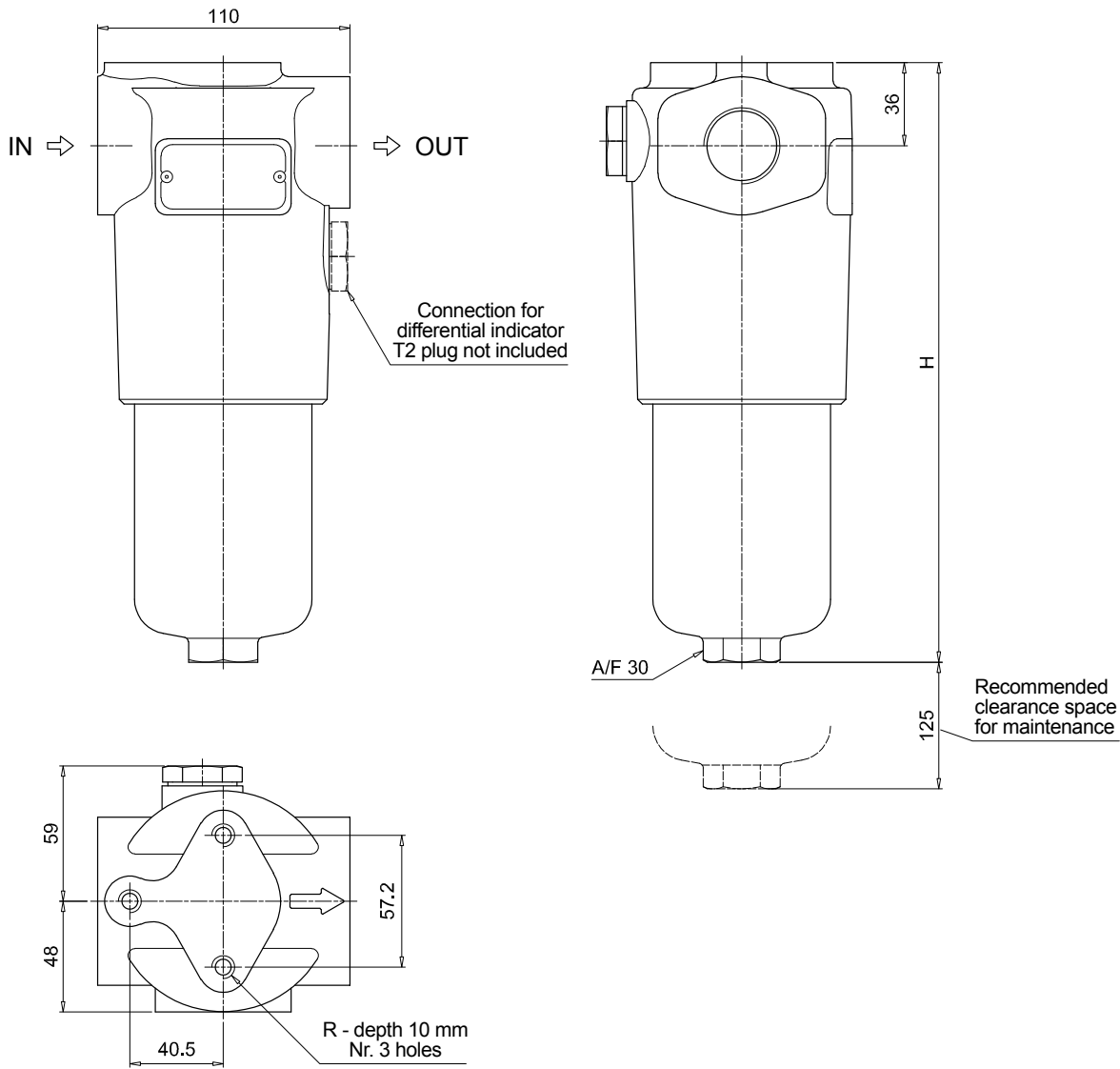


FHP065

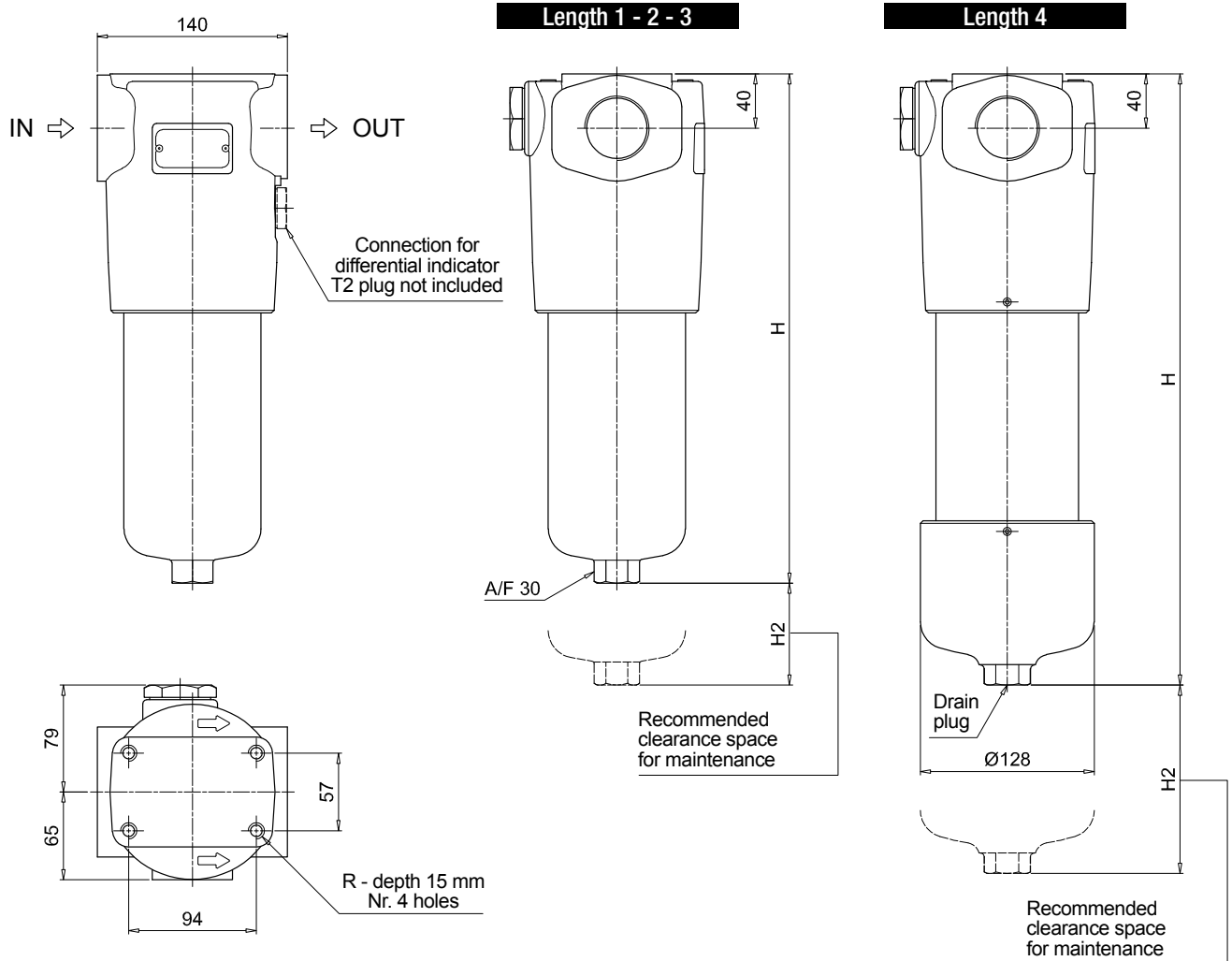
Filter length	H [mm]
1	196
2	227
3	329
Connections	R
G1-G2	M8
G3-G4-G5-G6	5/16" UNC

FHP FHP065 - FHP135 - FHP320

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



FHP320

Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
1	299	150	-
2	422	150	-
3	554	150	-
4	707	150	550

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC
F5	M12
F6	1/2" UNC

Designation & Ordering code

COMPLETE FILTER

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

Series and size
FHP500

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
P01 MP Filtri standard
P02 Maintenance from the bottom of the housing
P03 Drain plug on length 1 - 2 - 3
Pxx Customized

FILTER ELEMENT

Configuration example: **HP500** **4** **A06** **A** **S** **P01**

Element series and size
HP500

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

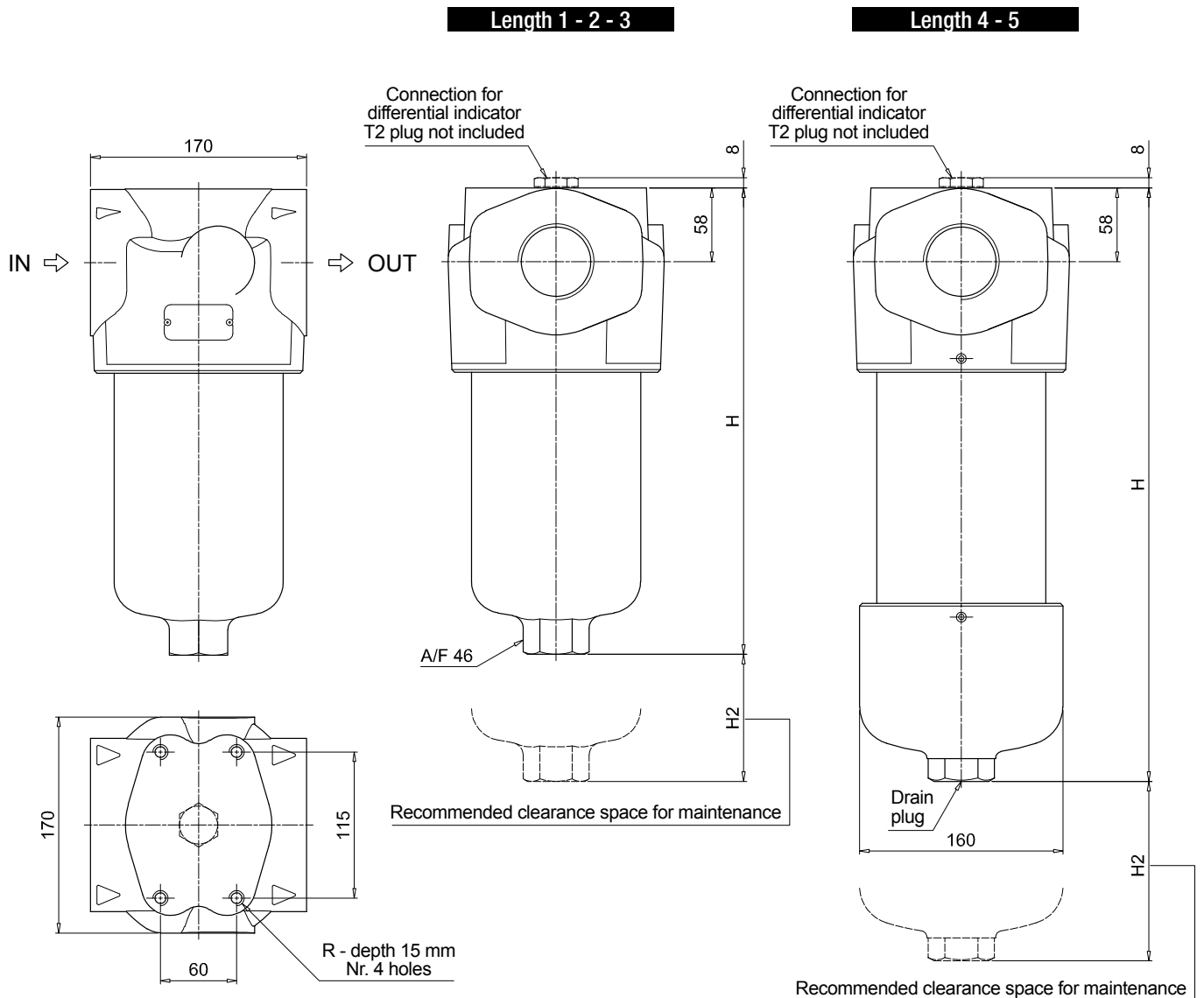
Seals
A NBR
V FPM

Element Δp
N 20 bar
R 20 bar
S 210 bar

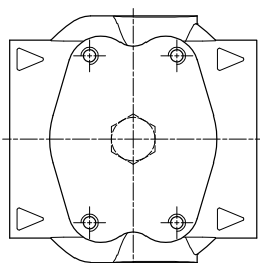
Execution
P01 MP Filtri standard
Pxx Customized

ACCESSORIES

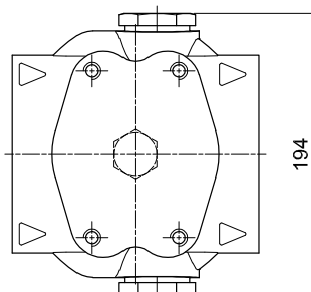
Differential indicators		page			page
DEA	Electrical differential indicator	563	DLE	Electrical / visual differential indicator	566
DEH	Hazardous area electronic differential indicator	563-564	DTA	Electronic differential indicator	567
DEM	Electrical differential indicator	564-565	DVA	Visual differential indicator	567
DLA	Electrical / visual differential indicator	565-566	DVM	Visual differential indicator	567
Additional features		page			
T2	Plug	568			



Valves S - B - T - D



Valves V - Z



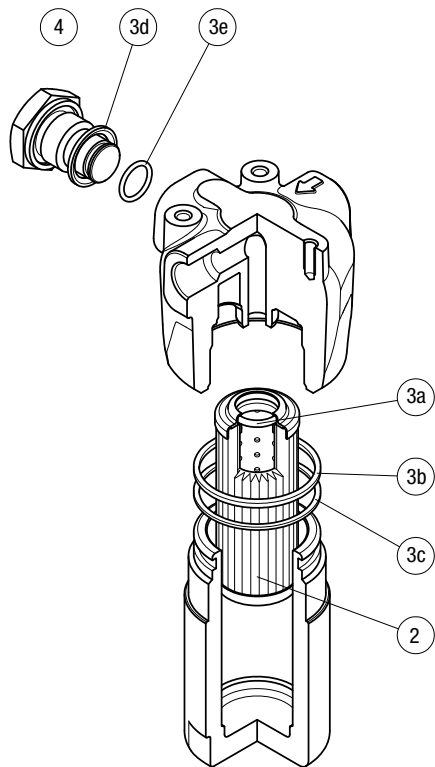
FHP500

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

Order number for spare parts

FHP 010 - 011

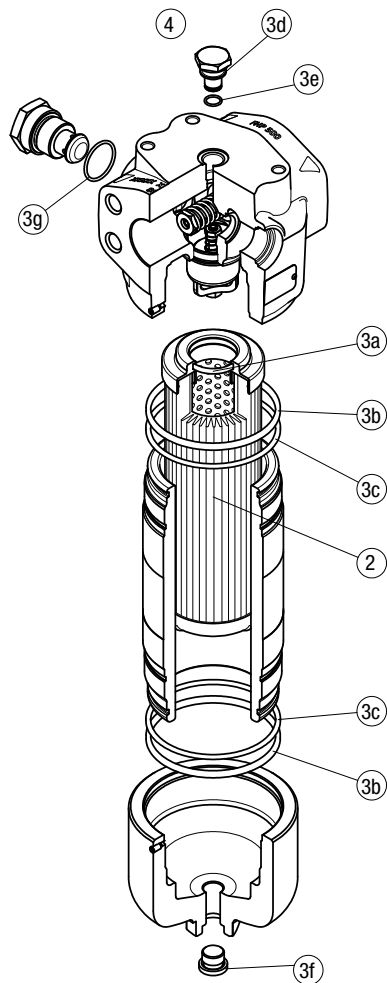


Q.ty:
nr. 0 pcs. for version 1
(without indicator port)

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

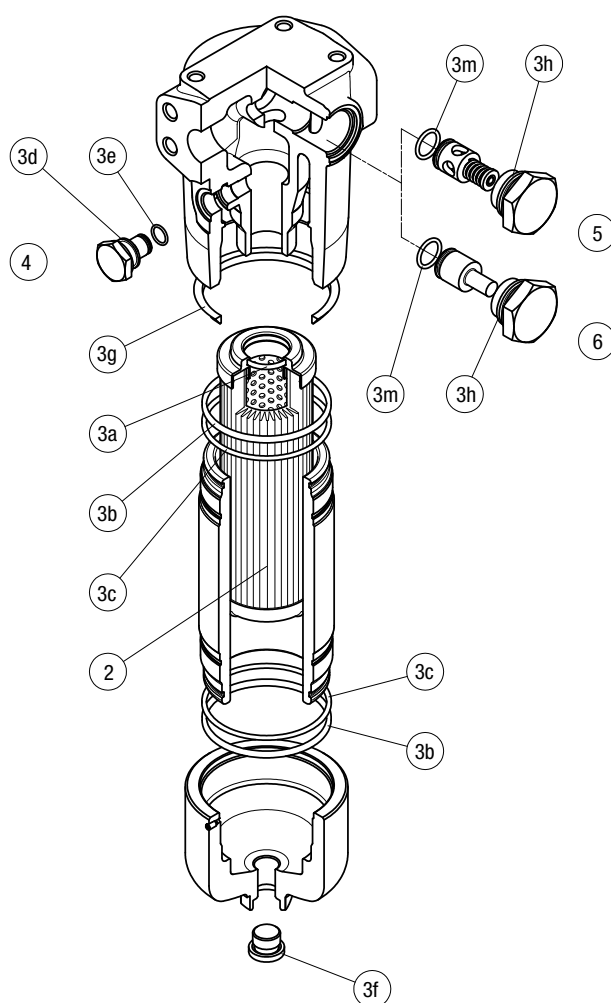
Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	2	3 (3a ÷ 3e)		4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FHP 010-011	See order table	02050501	02050492	T2H	T2V

FHP 500



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

FHP 065 - 135 - 320



Item:		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
		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		02050269	02050280			02001117	02001137	02001143	02001392
FHP 320		02050272	02050283			02001118	02001138	02001144	02001395