

FHB series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 485 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



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FHB050



FHB065



FHB135



FHB320

Description

Technical data

High Pressure filters

Manifold

Maximum working pressure up to 32 MPa (320 bar)

Flow rate up to 485 l/min

FHB is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the side of the manifold, through the proper flanged interface.

Available features:

- Manifold connections up to Ø30 mm, for a maximum flow rate of 485 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
- 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
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve 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: Steel
- Check valve: Steel

Pressure

- Working pressure: 32 MPa (320 bar)
- Test pressure: 48 MPa (480 bar)
- Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 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 H: 210 bar (not available for FHB050)
- Microfibre filter elements - series S: 210 bar (only for FHB050)
- 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

Manifold mounting

Note

FHB filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm ³]						
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHB 050		2.61	2.98	3.39	3.86	5.04		0.21	0.30	0.40	0.52	0.81
FHB 065		3.33	3.69	4.90	-	-		0.20	0.27	0.49	-	-
FHB 135		6.61	8.21	9.21	-	-		0.40	0.73	0.94	-	-
FHB 320		12.95	15.08	17.37	26.77	-		0.91	1.63	2.40	3.59	-

Filter series	Length	Filter element design - N Series						Filter element design - S Series				
		A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHB 050	1	43	42	79	81	101	131	30	40	58	60	74
	2	53	58	84	93	112	132	46	50	76	86	108
	3	67	70	94	101	119	133	59	62	87	95	115
	4	82	87	106	108	122	134	74	80	101	103	119
	5	102	104	119	122	127	136	90	92	105	113	126

Filter series	Length	Filter element design - N Series						Filter element design - H Series				
		A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHB 065	1	25	33	55	62	87	133	23	25	49	58	81
	2	33	51	70	76	101	134	33	38	66	75	94
	3	60	71	97	103	118	138	60	68	95	102	116
FHB 135	1	67	72	120	129	177	212	49	55	97	100	160
	2	109	116	152	154	224	250	90	110	137	140	182
	3	153	155	201	205	226	253	126	142	175	187	207
FHB 320	1	130	143	238	286	343	442	110	117	192	201	304
	2	259	281	391	409	454	468	200	230	319	325	392
	3	332	368	441	455	463	476	269	312	381	389	432
	4	368	390	446	462	481	488	311	334	388	394	437

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.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

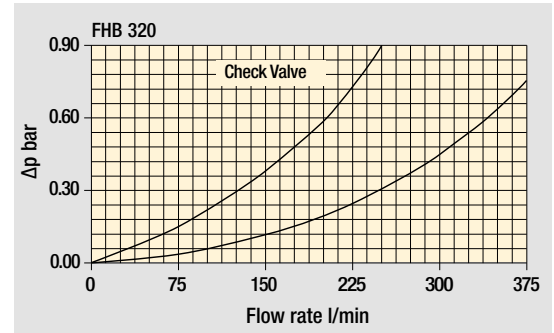
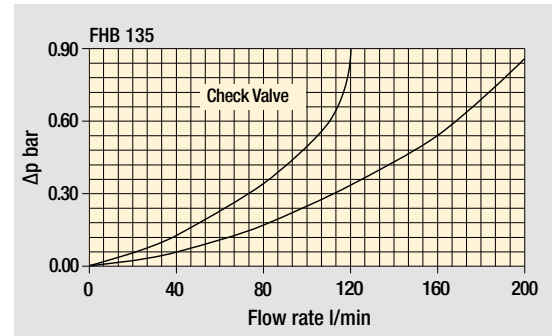
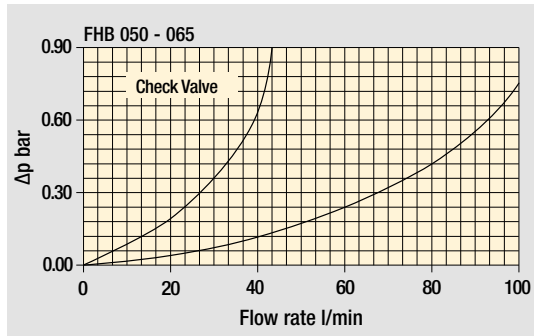
Hydraulic symbols

Filter series	Style S	Style B	Style T	Style D
FHB 050	•	•	•	•
FHB 065	•	•	•	•
FHB 135	•	•	•	•
FHB 320	•	•	•	•

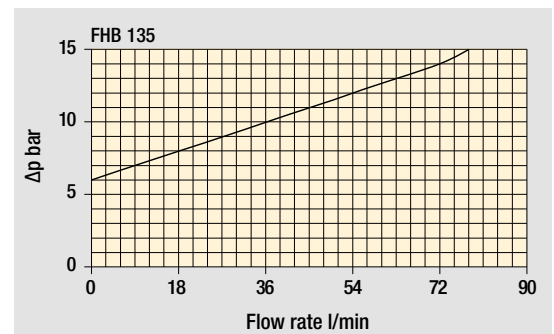
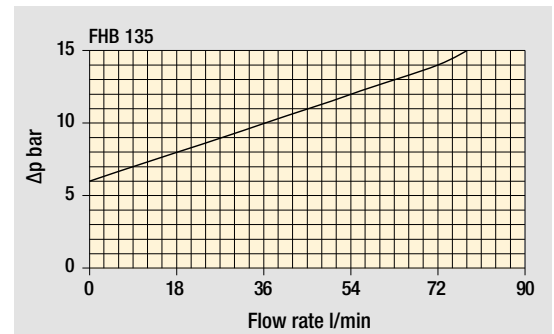
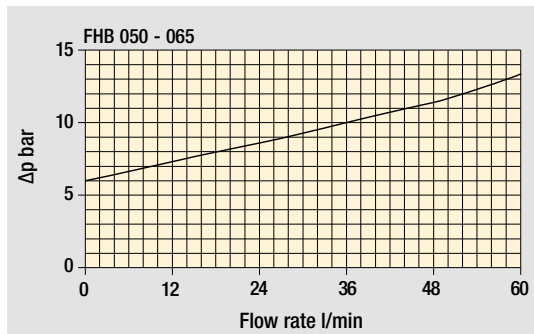
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Pressure drop

Filter housings Δp pressure drop



Bypass valve 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.

Designation & Ordering code

COMPLETE FILTER

Configuration example: **FHB050** | **2** | **T** | **A** | **F1** | **A06** | **S** | **P01**

Series and size
FHB050

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

Seals
A NBR
V FPM

Connections
F1 Manifold

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
	S	B	T	D	
N 20 bar	-	•	-	•	P01 MP Filtri standard
S 210 bar	•	-	•	-	Pxx Customized

FILTER ELEMENT

Configuration example: **HP050** | **2** | **A06** | **A** | **S** | **P01**

Element series and size
HP050

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	Element Δp	Execution	
		P01	Pxx
A NBR	N 20 bar	MP Filtri standard	Customized
V FPM	S 210 bar	MP Filtri standard	Customized

CLOGGING INDICATORS

See page 717

DEA Electrical differential pressure indicator

DEM Electrical differential pressure indicator

DEU Electrical differential pressure indicator

DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator

DTA Electronic differential pressure indicator

DVA Visual differential pressure indicator

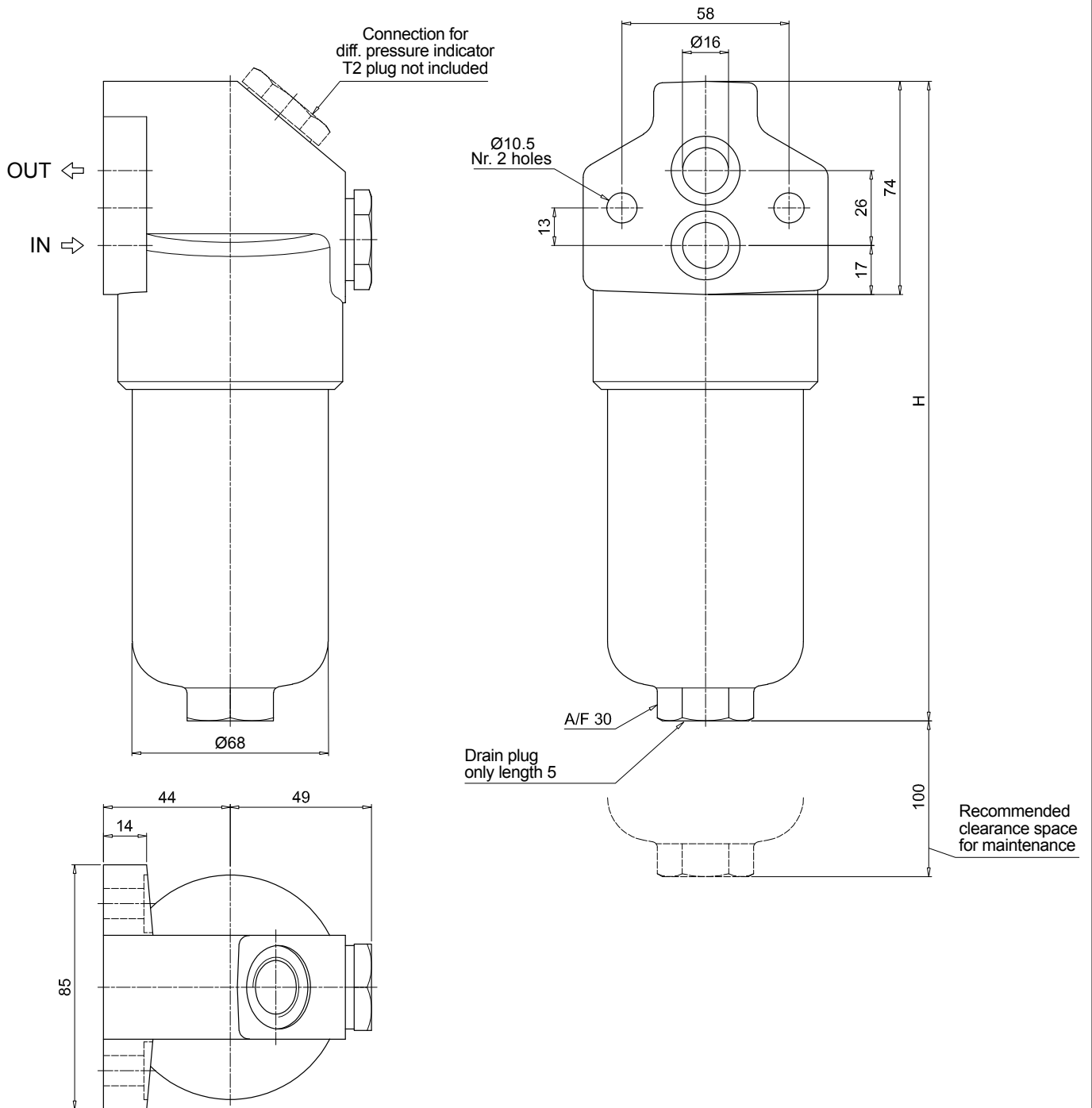
DVM Visual differential pressure indicator

PLUGS

See page 737

T2 Plug (not included)

FHB050	
Filter length	H [mm]
1	185
2	222
3	264
4	312
5	434



FHB FHB065 - FHB135 - FHB320

Designation & Ordering code

COMPLETE FILTER

Series and size				Configuration example: FHB320 4 S A F1 A06 H P01												
FHB065 FHB135 FHB320																
Length	FHB065	FHB135	FHB320													
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															
Seals																
A	NBR															
V	FPM															
Connections																
F1	Manifold															
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		1	2	3	4			
				N	20 bar	-	•	-	•	P01	MP Filtri standard	•	•	•	•	
				H	210 bar	•	-	•	-	P02	Maintenance from the bottom of the housing	-	-	-	•	
								Pxx				Customized	•	•	•	•

FILTER ELEMENT

Element series and size				Configuration example: HP320 4 A06 A H P01								
HP065 HP135 HP320												
Element length	HP065	HP135	HP320									
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		Element Δp		Execution				
				A	NBR	N	20 bar	P01				MP Filtri standard
				V	FPM	H	210 bar	Pxx				Customized

CLOGGING INDICATORS

See page 717

DEA	Electrical differential pressure indicator	DLE	Electrical / visual differential pressure indicator
DEM	Electrical differential pressure indicator	DTA	Electronic differential pressure indicator
DEU	Electrical differential pressure indicator	DVA	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	DVM	Visual differential pressure indicator

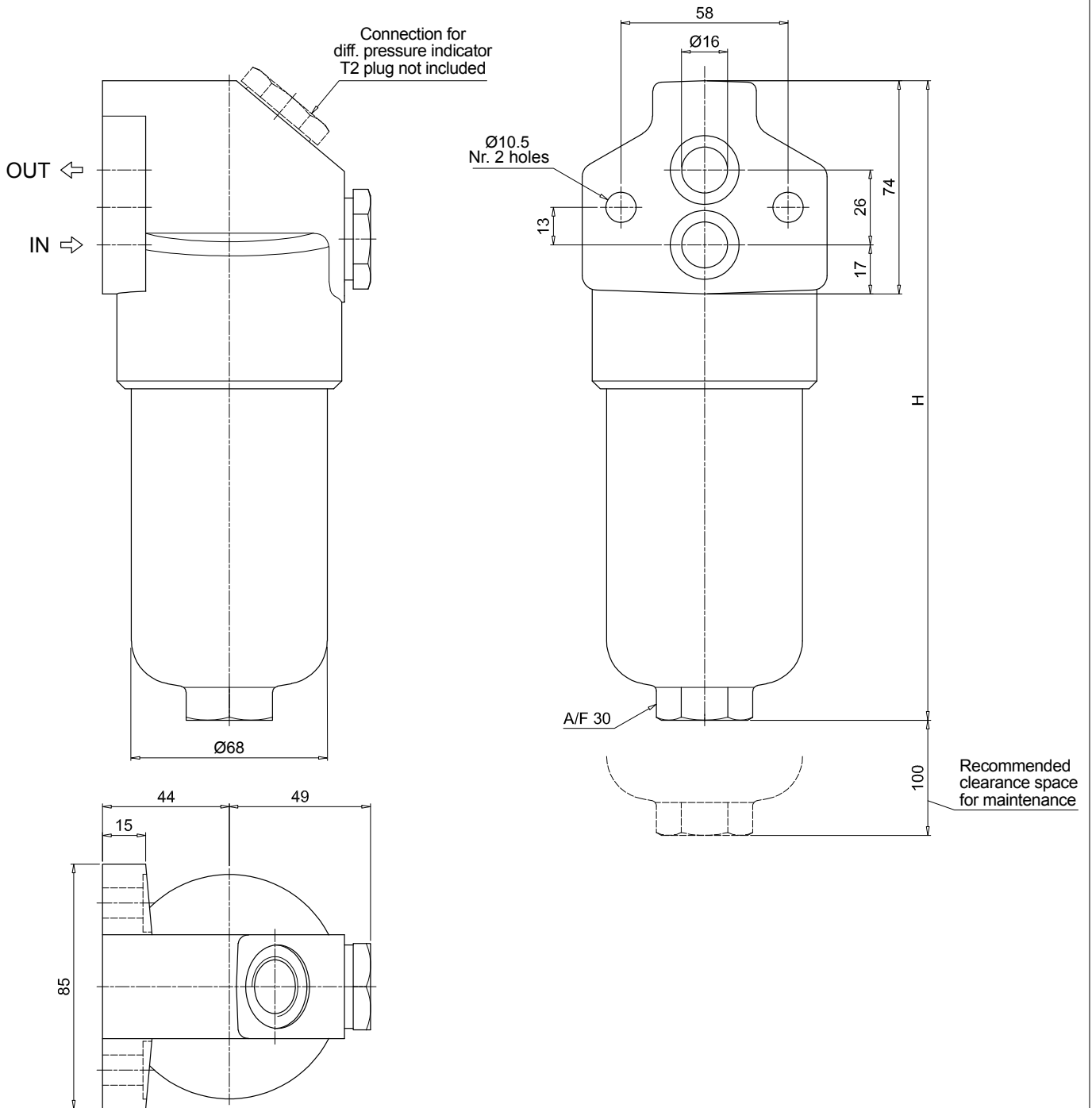
PLUGS

See page 737

T2	Plug (not included)
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FHB065

Filter length	H [mm]
1	194
2	225
3	327

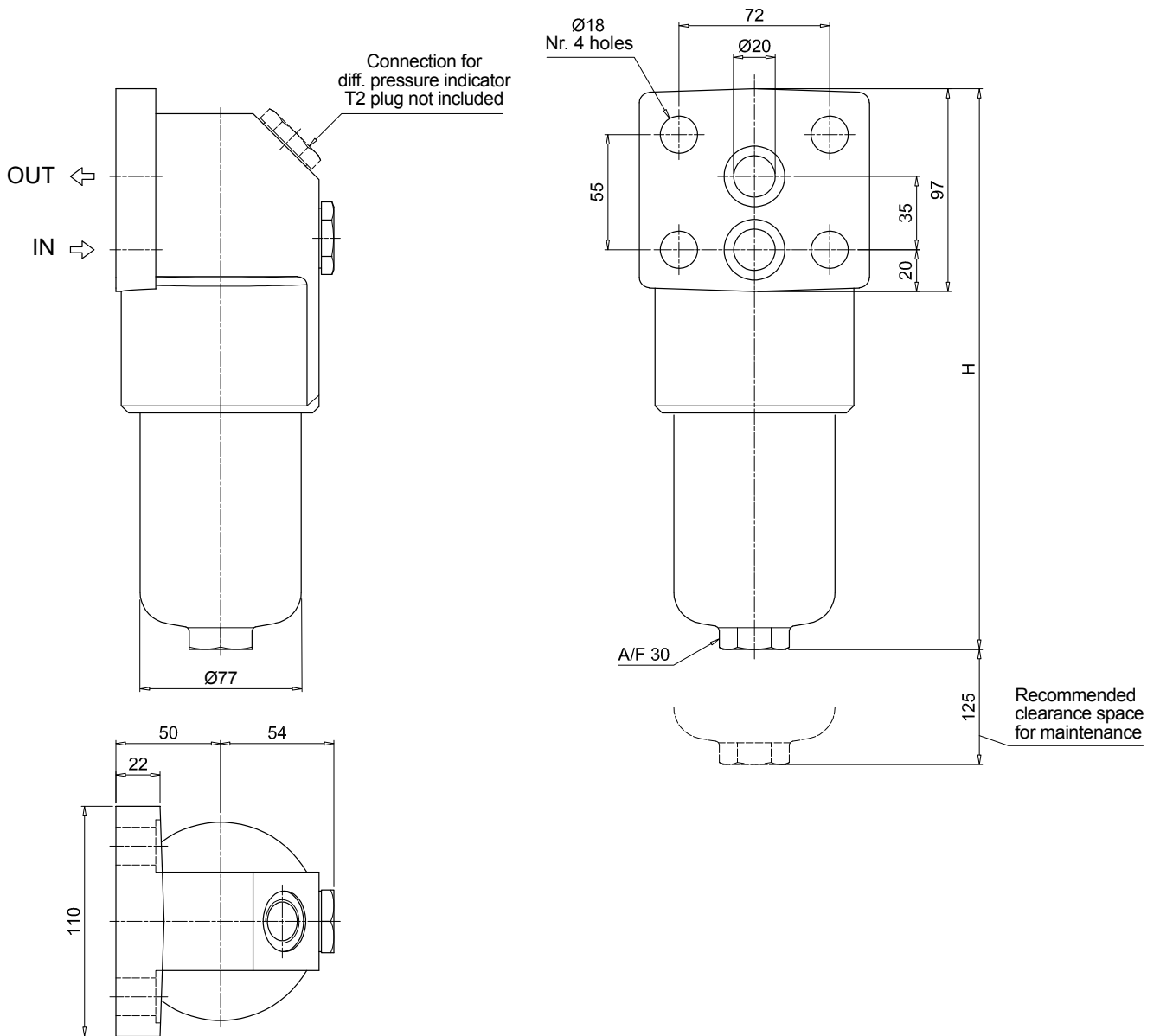


FHB FHB065 - FHB135 - FHB320

Dimensions

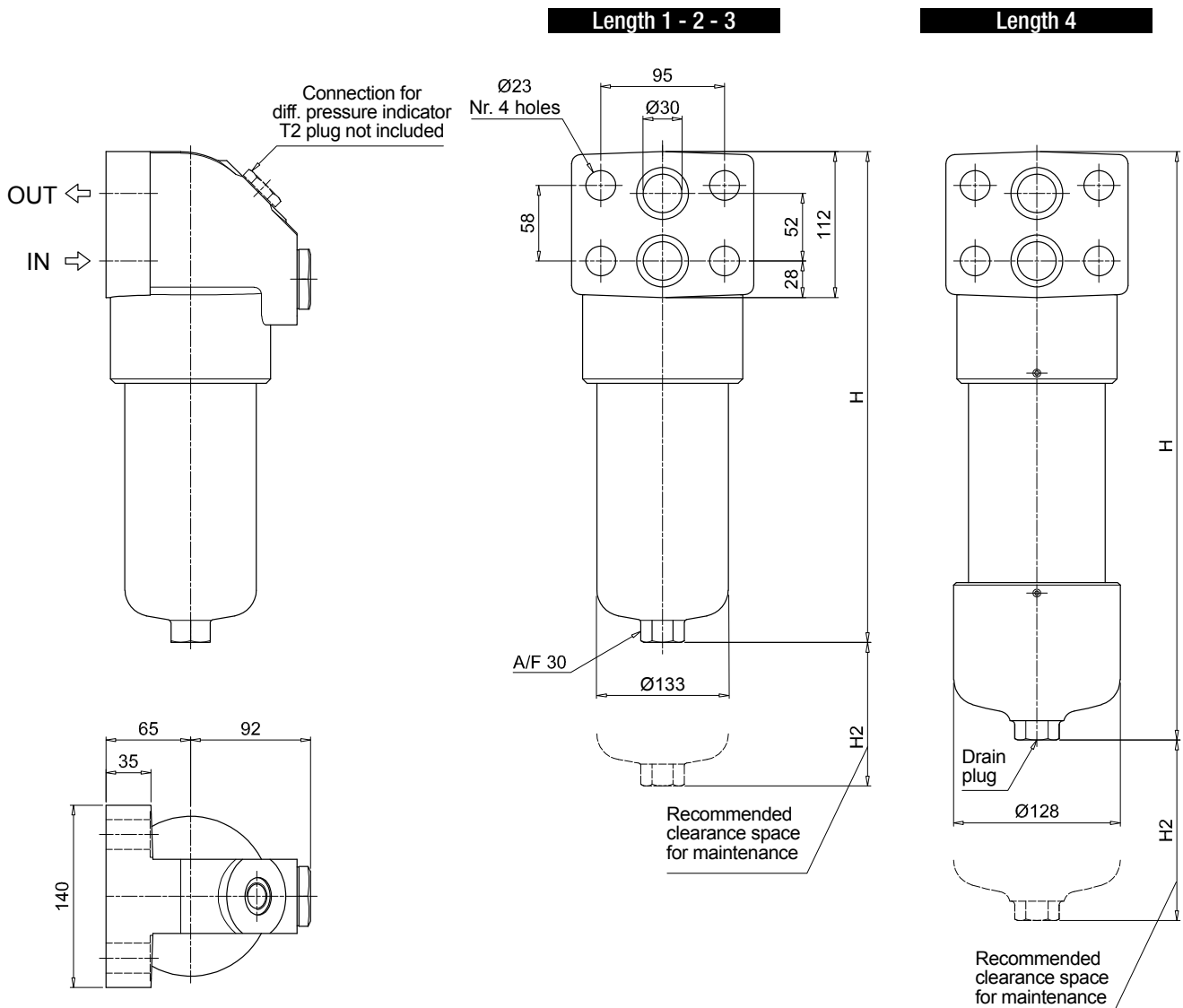
FHB135

Filter length	H [mm]
1	268
2	381
3	456



FHB320

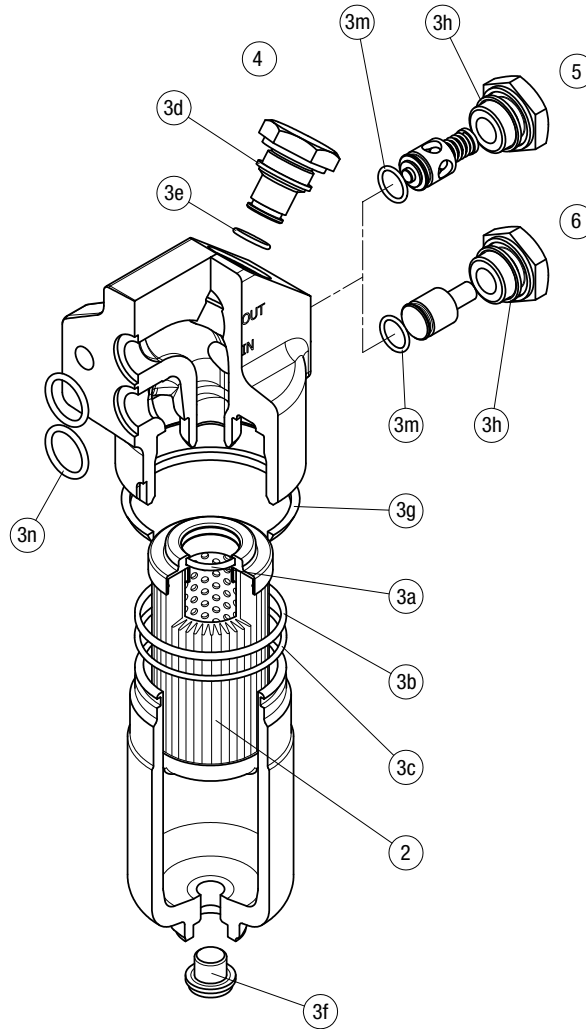
Filter length	H [mm]	H2 [mm]	
		Execution P01	Execution P02
1	301	150	-
2	424	150	-
3	556	150	-
4	709	150	550



FHB SPARE PARTS

Order number for spare parts

FHB 050 - 065 - 135 - 320



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		Bypass assembly		Non-bypass assembly	
		NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM
FHB 050		02050412	02050413			02001312	02001385	02001314	02001386
FHB 065	See order table	02050266	02050277	T2H	T2V	02001312	02001385	02001314	02001386
FHB 135		02050270	02050281			02001312	02001385	02001314	02001386
FHB 320		02050273	02050284			02001381	02001382	02001383	02001384

