

PHHD Series

● DESCRIPTION

Return filter

Connection type and size:

Threaded connection: 1/2" 3/4" 1" 1-1/4" 1-1/2" 2"

SAE Flange connection: 1-1/2" 2"

Maximum flow rate up to 880 l/min

● TECHNICAL PARAMETER

Maximum working pressure: 8 bar

Bypass valve opening pressure: 3 bar

Transmitter opening pressure: 2 bar

Temperature range: -25°C to +110°C

● MATERIALS

Head: Cast aluminium

Filter bowl: Polyamide

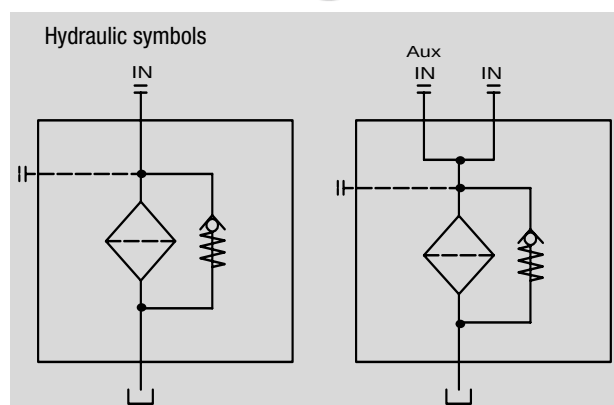
Seals: NBR nitrile rubber (standard)

Or FKM fluororubber (customizable)

Filter element material: Fiberglass



Highforce P



● MEDIA COMPATIBILITY

Suitable for mineral oil, lubricating oil, fire-resistant oil, and rapidly biodegradable media.
(If used for water-based or special media, please consult our sales department.)

Weights [kg] and volumes dm³

Filter series	Weights [kg]					Volumes [dm ³]				
	Length	1	2	3	4	Length	1	2	3	4
PHHD 030		0.40	-	-	-		0.29	-	-	-
PHHD 100		0.61	0.64	0.67	0.74		0.64	0.85	1.20	1.65
PHHD 181		2.20	3.00	-	-		2.50	4.00	-	-
PHHD 184		2.55	3.45	-	-		2.65	4.45	-	-
PHHD 400		3.35	3.65	3.90	-		3.70	4.60	5.40	-

FILTER ASSEMBLY SIZING

Flow rates (l/min)

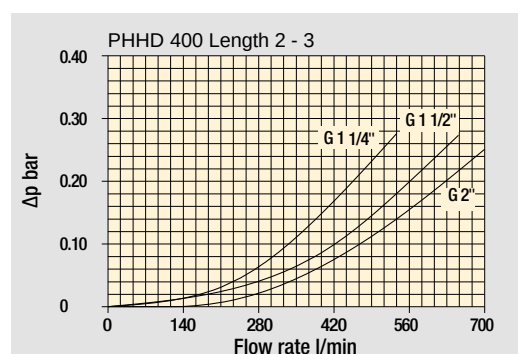
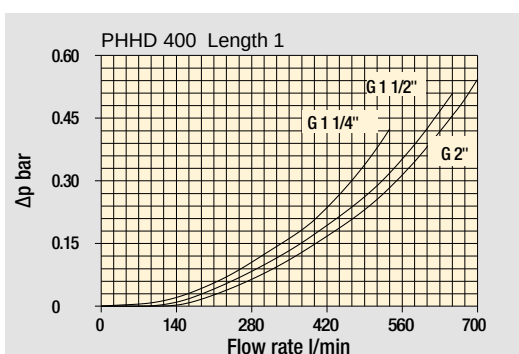
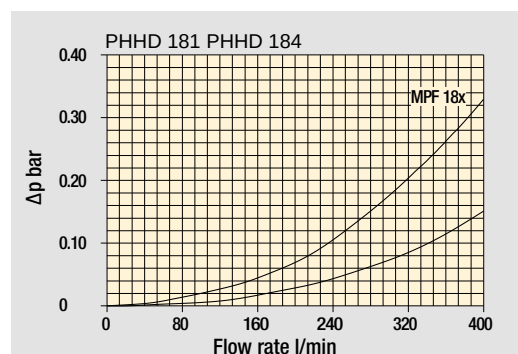
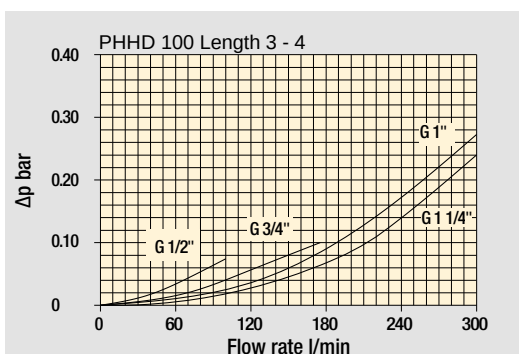
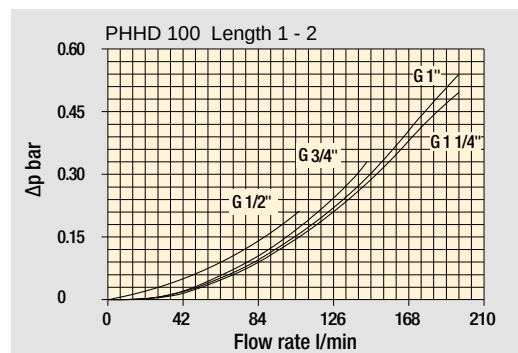
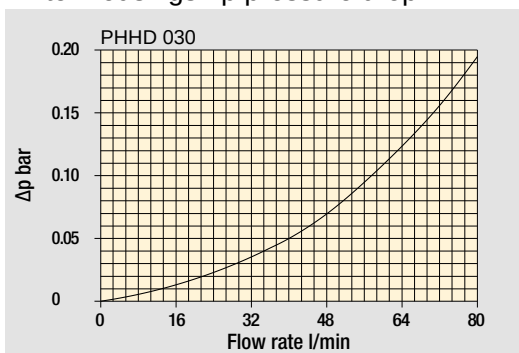
Filter series	Length	Filter element design - F series					Filter element design - W series		
		F03	F05	F10	F20	F30	W25	W60	W90
PHHD 030	1	7	10	24	29	47	60	66	84
PHHD 100	1	18	20	53	56	65	87	96	153
	2	28	38	65	75	95	111	123	158
	3	48	55	125	135	169	224	251	289
	4	79	89	180	185	198	264	289	306
PHHD 181	1	127	148	235	243	278	285	299	441
	2	231	262	358	382	388	404	412	472
PHHD 184	1	127	148	235	243	278	285	299	441
	2	231	262	358	382	388	404	412	472
PHHD 400	1	150	171	294	304	350	370	390	585
	2	237	252	454	462	589	619	645	868
	3	248	288	553	609	621	680	703	885

Maximum flow rate for a complete return filter with a pressure drop $\Delta p = 0.5$ bar.

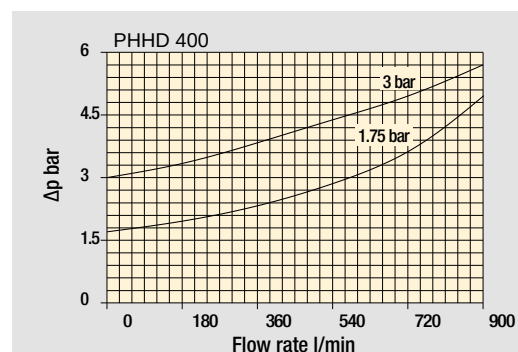
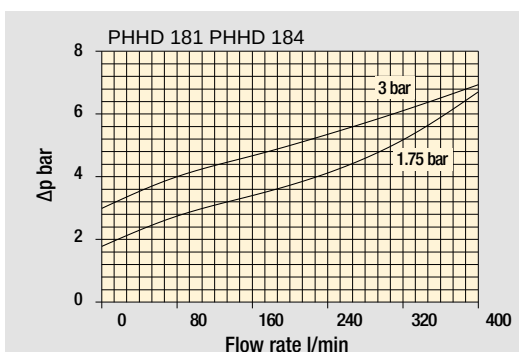
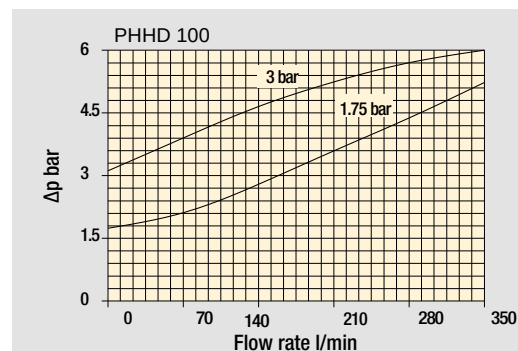
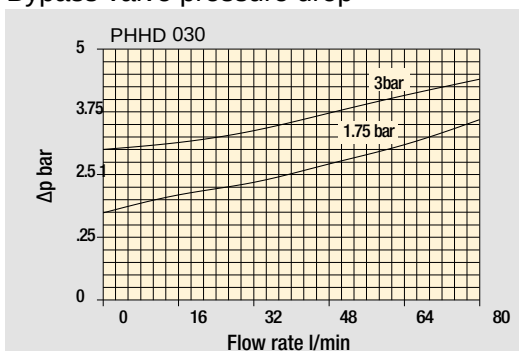
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968 Δp varies proportionally with density.

Filter housings Δp pressure drop



Bypass valve pressure drop



Ordering Options Table

	PHHD	30	1	G1	F	10	N	A	B
Filter type									
Filter specification									
30									
Length									
1 2									
Connection type and size									
G1=G1/2"									
Filter element material									
F: Fiberglass W: Stainless steel wire mesh									
Filter finenes(μm)									
F: 03 05 10 20 30 W: 25 60 90									
Seals									
N: NBR V: FKM									
Differential pressure transmitter									
A: Steel blanking plug in indicator port E: Vacuum gauge indicator BM: Visual (Automatic reset) B: Visual (Automatic reset) CM: Electrical indicator C: Electrical indicator CL: Visual and electrical indicators									
Bypass valve opening pressure									
B = 1.75 bar E = 3 bar									

Filter Element

PYHD 30 1 F 10 N B

Filter element type

Filter element specification

30

Length

1 2

Filter element material

F: Fiberglass

W: Stainless steel wire mesh

Filter fineness(μm)

F: 03 05 10 20 30

W: 25 60 90

Seals

N: NBR V: FKM

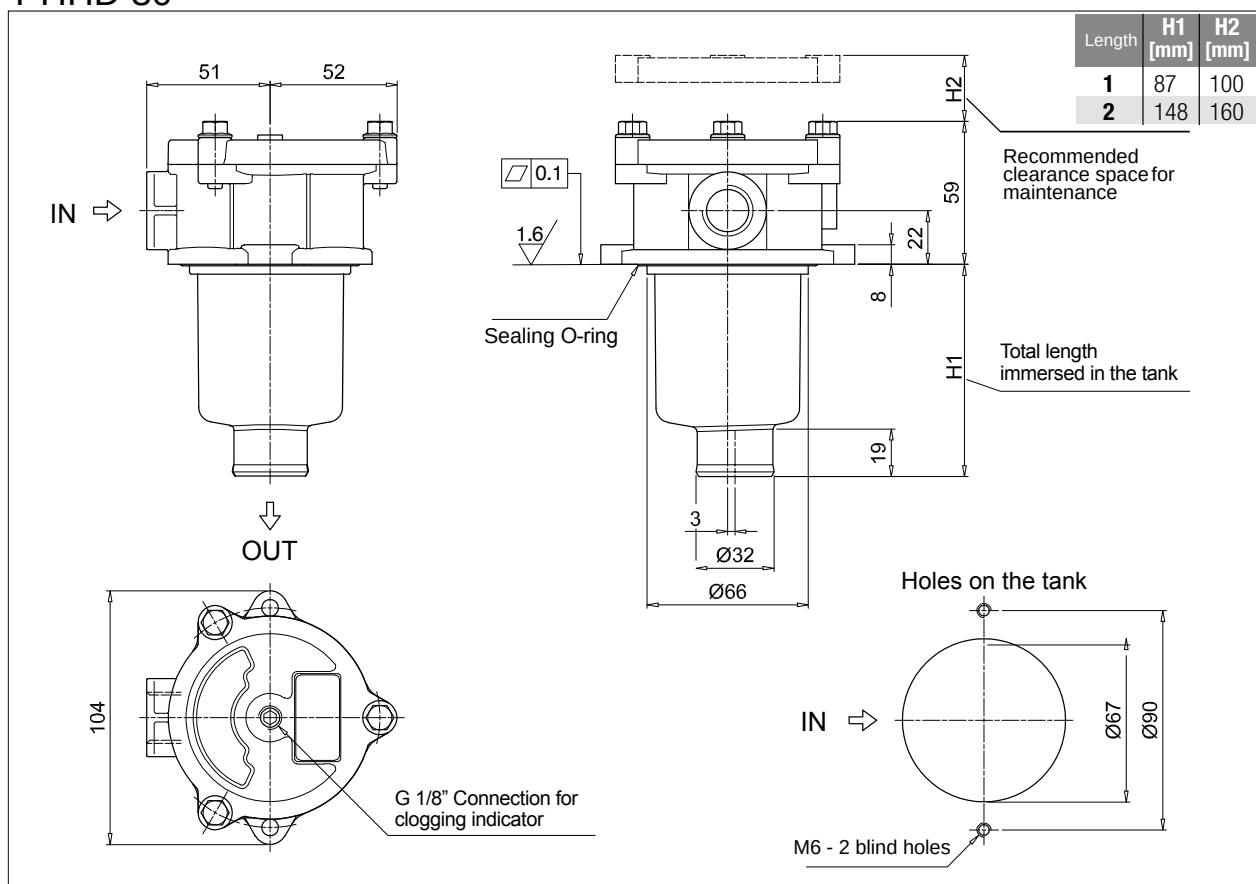
Bypass valve opening pressure

B = 1.75 bar

E = 3 bar

DIMENSIONS

PHHD 30



Ordering Options Table

	PHHD	100	2	G1	F	10	N	A	B												
Filter type																					
Filter specification																					
100																					
Length																					
1 2 3 4																					
Connection type and size																					
<table border="1"> <thead> <tr> <th>Type</th> <th>Connection</th> <th>Filter specification</th> </tr> </thead> <tbody> <tr> <td>G1</td> <td>G1/2"</td> <td>●</td> </tr> <tr> <td>G3</td> <td>G3/4"</td> <td>●</td> </tr> <tr> <td>G4</td> <td>G1"</td> <td>●</td> </tr> </tbody> </table>	Type	Connection	Filter specification	G1	G1/2"	●	G3	G3/4"	●	G4	G1"	●									
Type	Connection	Filter specification																			
G1	G1/2"	●																			
G3	G3/4"	●																			
G4	G1"	●																			
Filter element material																					
F: Fiberglass W: Stainless steel wire mesh																					
Filter fineness(μm)																					
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Bypass valve opening pressure																					
B = 1.75 bar E = 3 bar																					

Filter Element

PYHD 100 2 F 10 N B

Filter element type

Filter element specification

100

Length

1 2 3 4

Filter element material

F: Fiberglass

W: Stainless steel wire mesh

Filter fineness(μm)

F: 03 05 10 20 30

W: 25 60 90

Seals

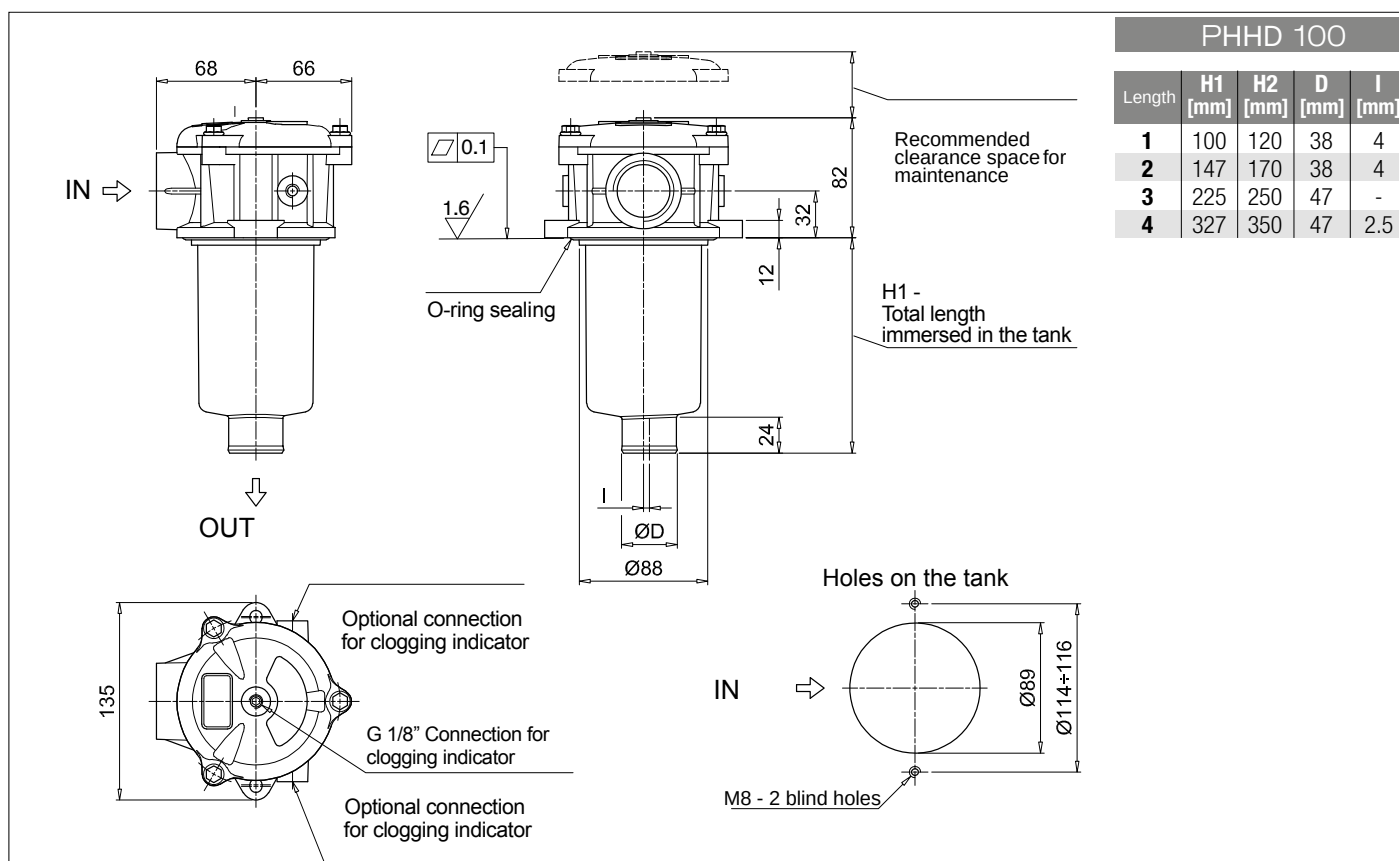
N: NBR V: FKM

Bypass valve opening pressure

B = 1.75 bar

E = 3 bar

DIMENSIONS



Ordering Options Table

	PHHD	181	1	G5	F	10	N	A	B														
Filter type																							
Filter specification																							
181																							
Length																							
1 2																							
Connection type and size																							
<table border="1"> <thead> <tr> <th rowspan="2">Type</th> <th rowspan="2">Connection</th> <th colspan="2">Filter specification</th> </tr> <tr> <th>181</th> <th>191</th> </tr> </thead> <tbody> <tr> <td>G5</td> <td>G1 1/4"</td> <td>●</td> <td>●</td> </tr> <tr> <td>G6</td> <td>G1 1/2"</td> <td>●</td> <td>●</td> </tr> </tbody> </table>	Type	Connection	Filter specification		181	191	G5	G1 1/4"	●	●	G6	G1 1/2"	●	●									
Type			Connection	Filter specification																			
	181	191																					
G5	G1 1/4"	●	●																				
G6	G1 1/2"	●	●																				
Filter element material																							
F: Fiberglass W: Stainless steel wire mesh																							
Filter fineness(μm)																							
F: 03 05 10 20 30 W: 25 60 90																							
Seals																							
N: NBR V: FKM																							
Differential pressure transmitter																							
A: Steel blanking plug in indicator port E: Vacuum gauge indicator BM: Visual (Automatic reset) B: Visual (Automatic reset) CM: Electrical indicator C: Electrical indicator CL: Visual and electrical indicators																							
Bypass valve opening pressure																							
B = 1.75 bar E = 3 bar																							

Ordering Options Table

PHHD 184 2 F22 F 10 N A B

Filter type

Filter specification

184

Length

1 2

Connection type and size

Type	Connection	Main Connections	Rear connections
G5	G1 1/4"	●	●
G6	G1 1/2"	●	●
F4	1-1/2" SAE	●	●
G25	G1 - 1/4"	●	●
G26	G1 - 1/2"	●	●
F24	1- 1/2" SAE	●	●

"●Optional"

Filter element material

F: Fiberglass

W: Stainless steel wire mesh

Filter fineness(μm)

F: 03 05 10 20 30

W: 25 60 90

Seals

N: NBR V: FKM

Differential pressure transmitter

A: Steel blanking plug in indicator port

E: Vacuum gauge indicator

BM: Visual (Automatic reset)

B: Visual (Automatic reset)

CM: Electrical indicator

C: Electrical indicator

CL: Visual and electrical indicators

Bypass valve opening pressure

B = 1.75 bar

E = 3 bar

Filter Element	PYHD	180	1	F	10	N	B
Filter element type							
Filter element specification							
180							
Length							
1 2							
Filter element material							
F: Fiberglass W: Stainless steel wire mesh							
Filter fineness(μm)							
F: 03 05 10 20 30 W: 25 60 90							
Seals							
N: NBR V: FKM							
Bypass valve opening pressure							
B = 1.75 bar E = 3 bar							

DIMENSIONS

PHHD 181

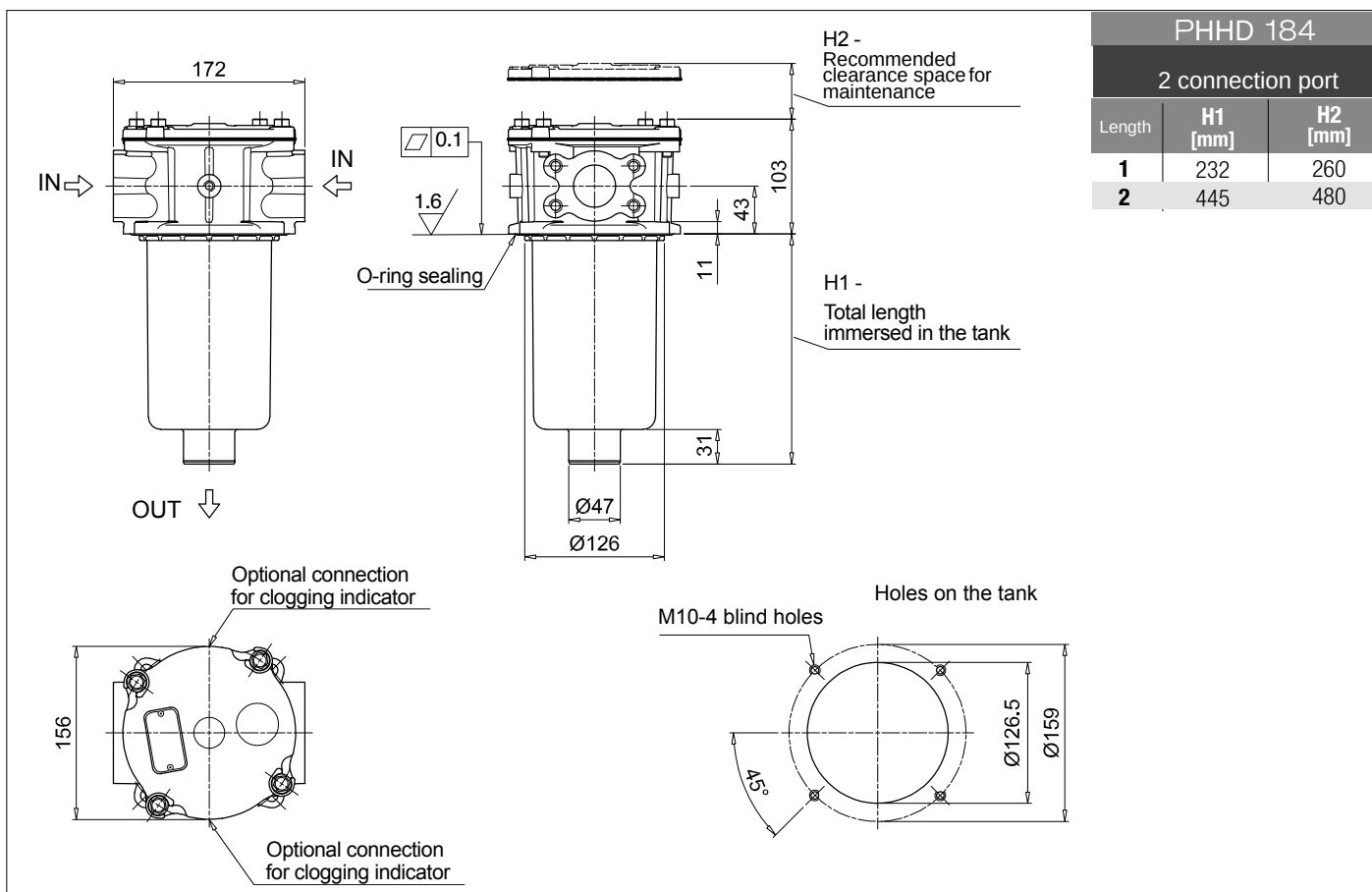
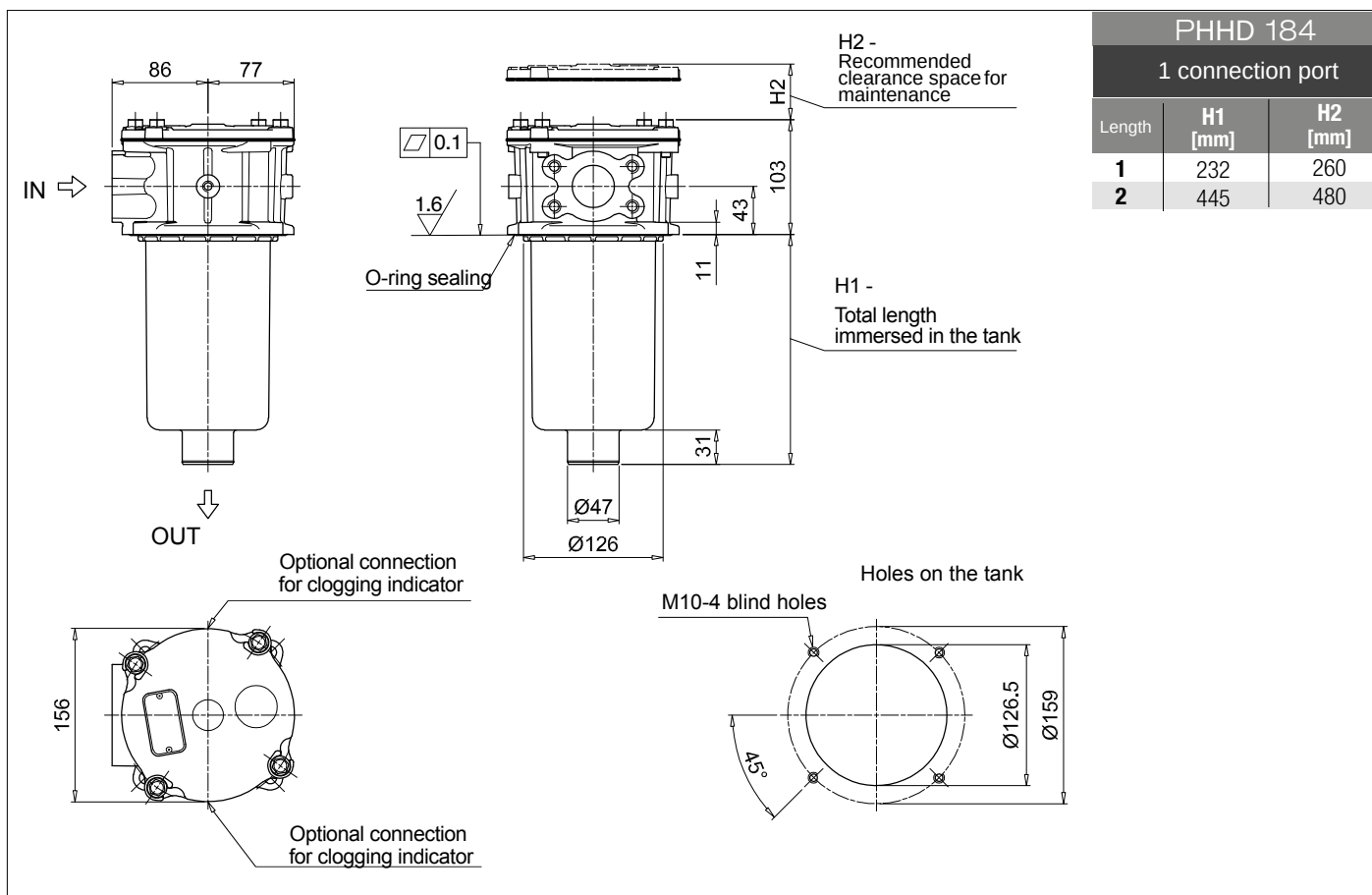
Length	H1 [mm]	H2 [mm]
1	235	255
2	448	475

Technical drawings of the PHHD 181 device. The top view shows a cylindrical body with a diameter of $\varnothing 130$ and a bottom flange with a diameter of $\varnothing 47$. The side view shows the device with an inlet (IN) and outlet (OUT) port. Dimensions include a total length of 91 mm, a clearance space of 35 mm, and a recommended clearance space for maintenance of 13 mm. The device is shown with an O-ring sealing and a 1.6 mm gap. The H1 dimension is the total length immersed in the tank, and the H2 dimension is the recommended clearance space for maintenance.

Technical drawing of the PHHD 181 device showing the bottom view. The device has a diameter of $\varnothing 130$ and a bottom flange with a diameter of $\varnothing 47$. The drawing shows optional connections for a clogging indicator, including a G 1/8" connection and a 1.6 mm gap. The dimensions 95 and 79 are shown for the overall width and height of the bottom flange.

Technical drawing of the PHHD 181 device showing the top view. The device has a diameter of $\varnothing 130$ and a bottom flange with a diameter of $\varnothing 47$. The drawing shows optional connections for a clogging indicator, including a G 1/8" connection and a 1.6 mm gap. The dimensions 95 and 79 are shown for the overall width and height of the bottom flange. The drawing also shows the optional connection for a clogging indicator, including a G 1/8" connection and a 1.6 mm gap.

DIMENSIONS



Ordering Options Table

PHHD 400 2 G5 F 10 N A E

Filter type

Filter specification

400

Length

1 2 3

Connection type and size

Type	Connection	Filter specification 400
G4	G1"	-
G5	G1 - 1/4"	●
G6	G1 - 1/2"	●
G7	G2"	●

Filter element material

F: Fiberglass

W:Stainless steel wire mesh

Filter fineness(μm)

F: 03 05 10 20 30

W: 25 60 90

Seals

N: NBR V: FKM

Differential pressure transmitter

A: Steel blanking plug in indicator port

E: Vacuum gauge indicator

BM: Visual (Automatic reset)

B: Visual (Automatic reset)

CM: Electrical indicator

C: Electrical indicator

CLVisual and electrical indicators

Bypass valve opening pressure

B = 1.75 bar

E = 3 bar

Filter Element

PYHD 400 1 F 10 N E

Filter element type

Filter element specification

400

Length

1 2 3

Filter element material

F: Fiberglass

W: Stainless steel wire mesh

Filter fineness(μm)

F: 03 05 10 20 30

W: 25 60 90

Seals

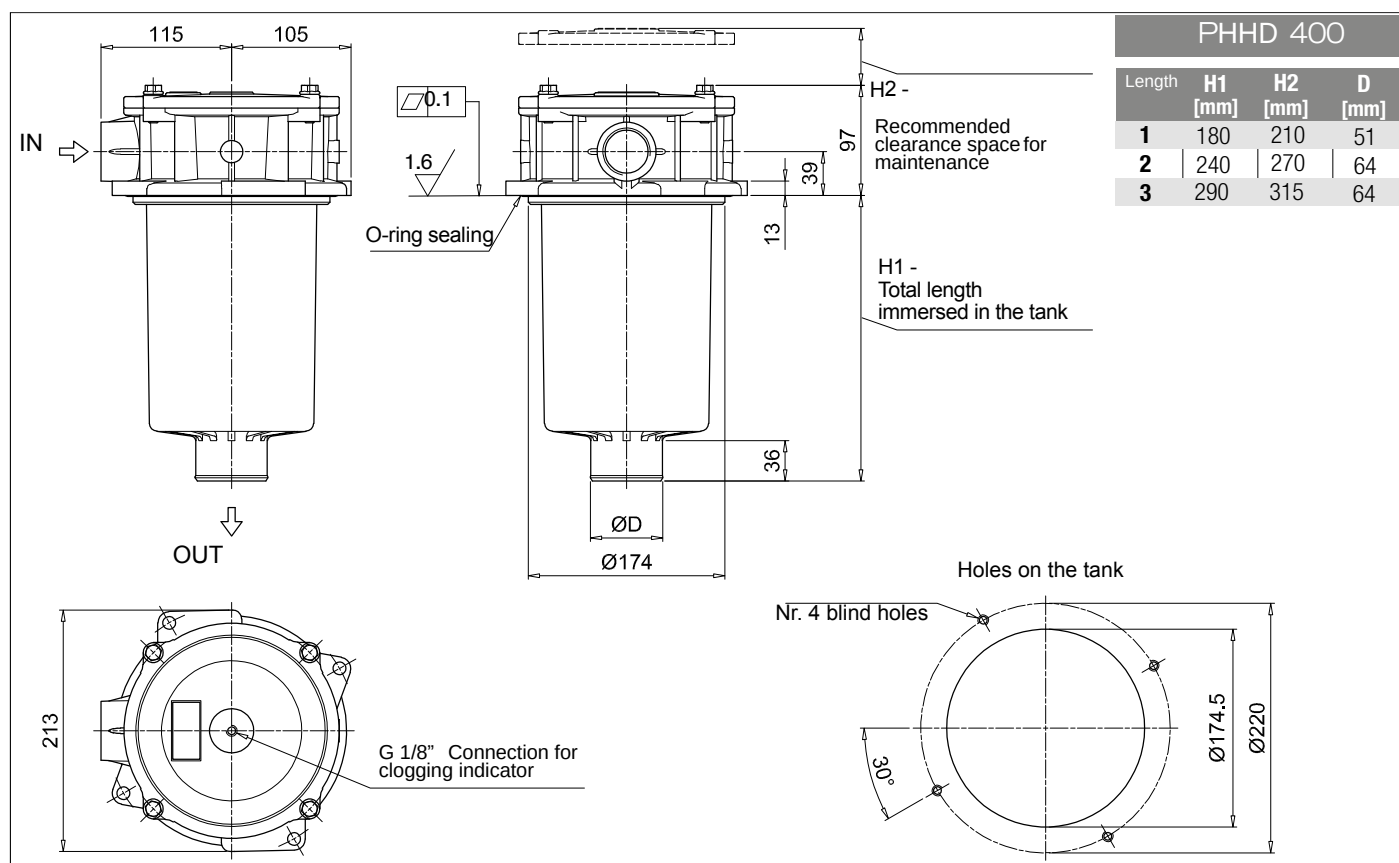
N: NBR, V: FKM

Bypass valve opening pressure

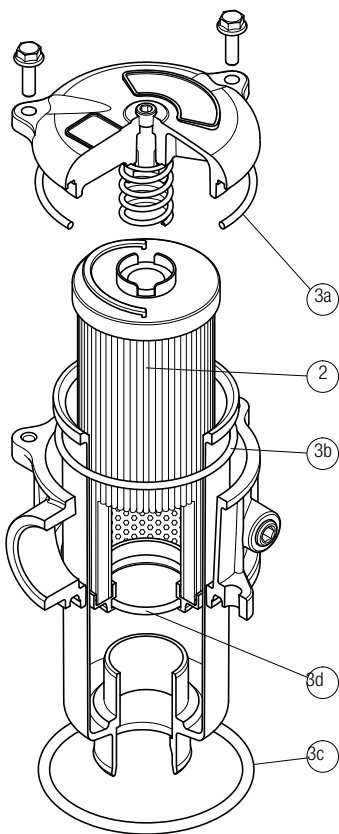
B = 1.75 bar

E = 3 bar

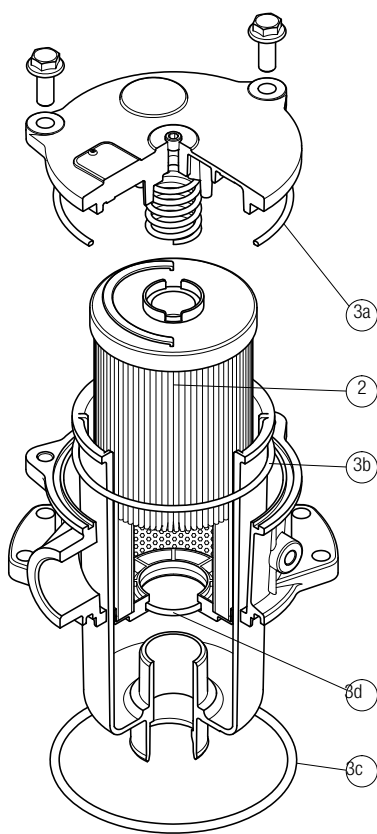
DIMENSIONS



PHHD 100



PHHD 181



O-RING SEALING