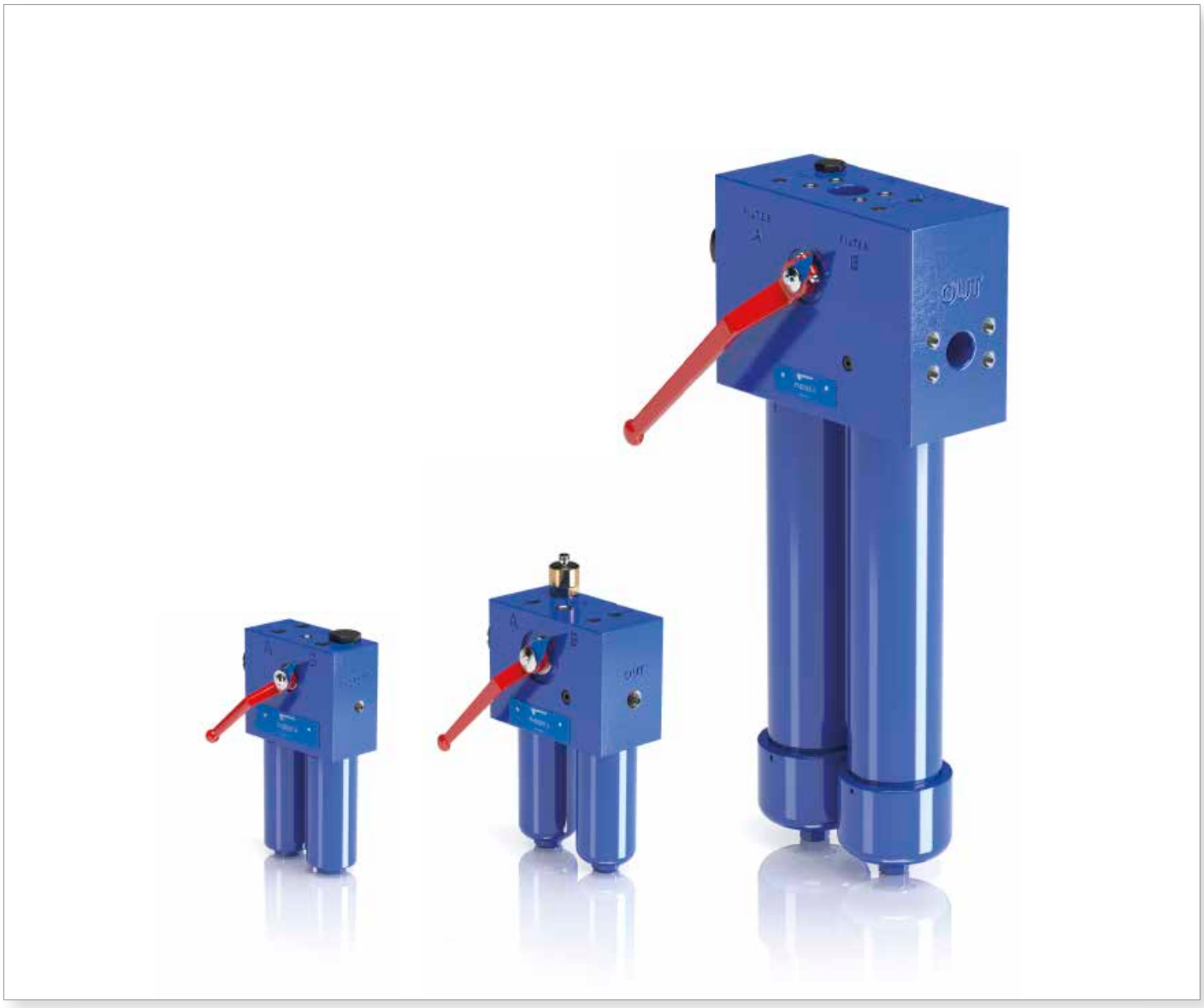
FHD series

Maximum working pressure up to 35 MPa (350 bar) - Flow rate up to 250 l/min



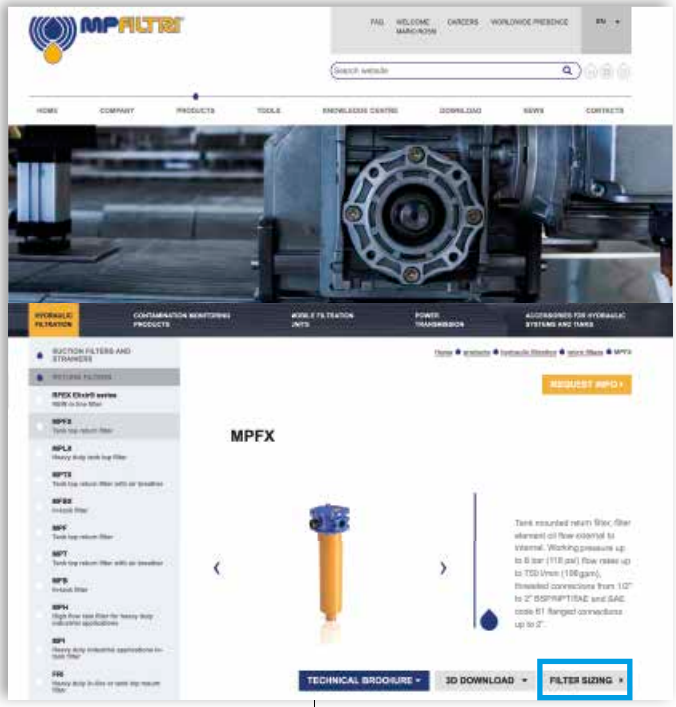
TYPICAL FILTER SIZING Selection Software

Step 1

Select “FILTER SIZING SOFTWARE” after login

OR

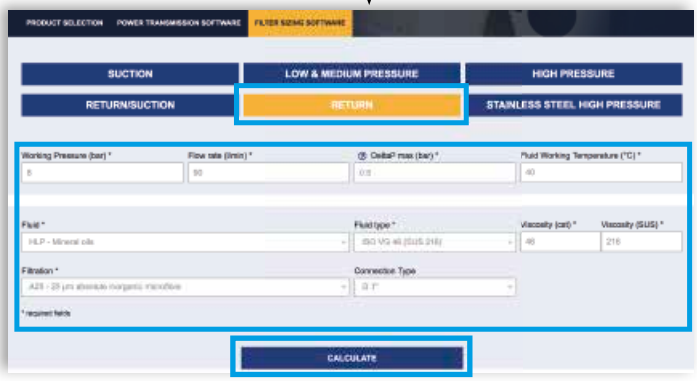
Select “FILTER SIZING” after login from a product page

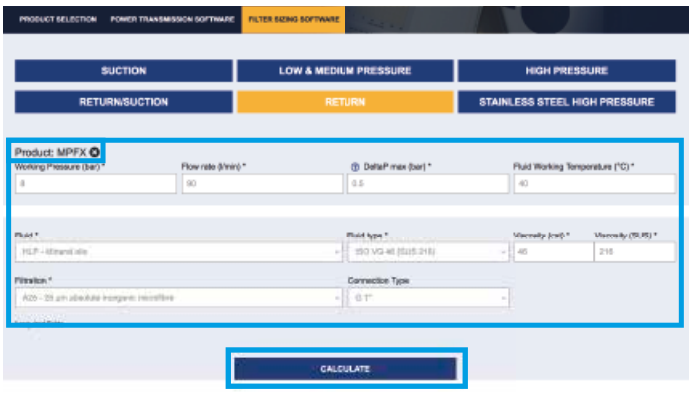


Choose the type of filter family.
Enter the main data for sizing the filter
then push CALCULATE.

Step 2

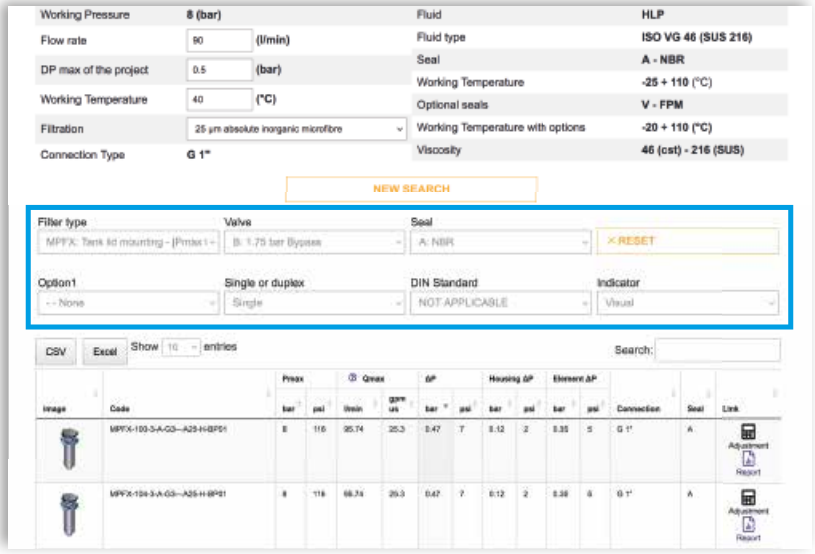
Enter the main data for sizing the filter
then push CALCULATE.





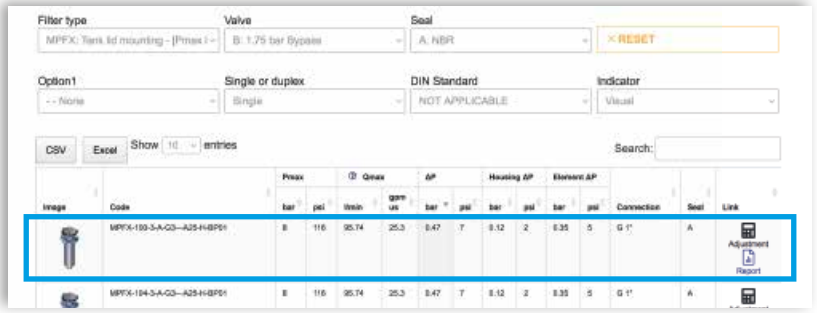
Step 3

Select the desidered options to choose the appropriate filter type for the application.



Step 4

Choose the most suitable filter from the proposed list.



Step 5

A SAVE YOUR FILTER'S REPORT

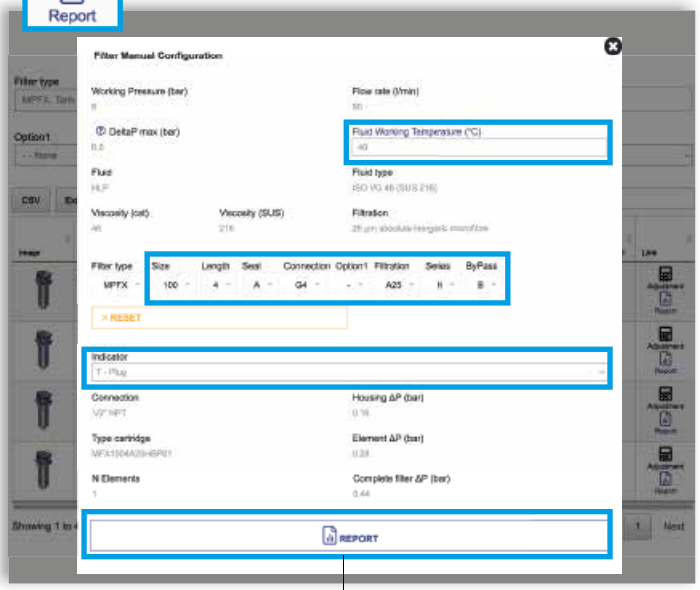
SAVE IN YOUR ARCHIVE
typing your reference data and then SAVE AS PDF

A new
browser window
displays the pdf

Close the report window

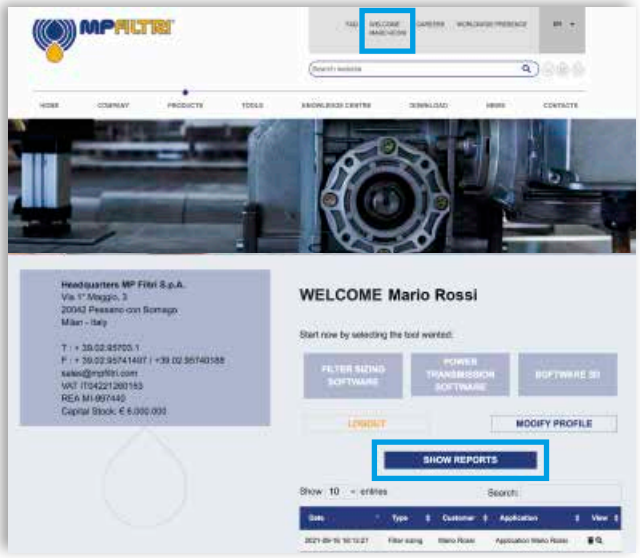
B MANUAL EDIT

It is possible to change the filter
modifying every parameter.



see **A**

By clicking your WELCOME button,
the SHOW REPORTS is displayed: select it to see your filters list.



FHD GENERAL INFORMATION

Description

High Pressure filters

Duplex
Maximum working pressure up to 35 MPa (350 bar)
Flow rate up to 250 l/min

FHD is a range of high pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Female threaded connections up to 1 1/4" and flanged connections up to 1 1/2", for a maximum flow rate of 345 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Balancing valve, available for FHD051, FHD326 and FHD333, to equalize the housing pressure before the switch.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- 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:
- System where shut-down causes high costs
- System where shut-down causes safety issues

Technical data

Filter housing materials
- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure
- Test pressure: 52.5 MPa (525 bar)
- Burst pressure: 105 MPa (1050 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 35 MPa (350 bar)

Bypass valve
- Opening pressure 600 kPa (6 bar) ±10%
- Other opening pressures on request.

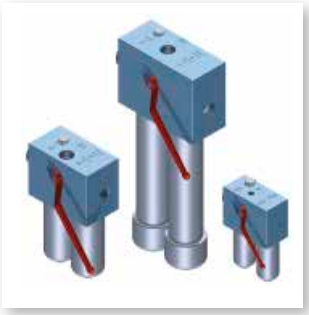
Δp element type
- Microfibre filter elements - series N: 20 bar
- Microfibre filter elements - series R: 20 bar (not available for FHD 021)
- Microfibre filter elements - series H: 210 bar (only for FHD 021)
- Microfibre filter elements - series S: 210 bar (not available for FHD 021)
- Wire mesh filter 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
In-line Inlet/Outlet 90°

Note
FHD 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
FHD 021		-	8.0	9.0	9.9	-		-	0.06	0.12	0.22	-
FHD 051		-	16.9	17.5	18.5	19.8		-	0.31	0.41	0.53	0.83
FHD 326		43.0	50.0	54.0	-	-		0.88	1.60	2.37	-	-
FHD 333		-	74.0	79.0	98.0	-		-	1.75	2.52	3.35	-

FILTER ASSEMBLY SIZING
Flow rates [l/min]

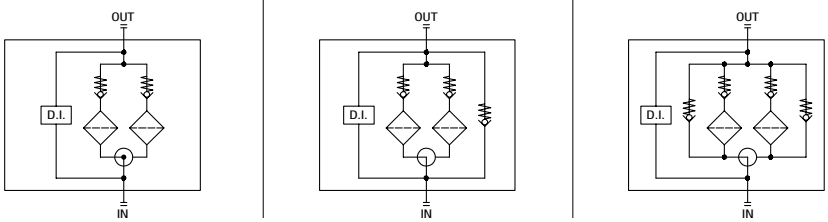
		Filter element design - H Series					
Filter series	Length	A03	A06	A10	A16	A25	M25
FHD 021	2	6	8	14	16	19	26
	3	10	12	18	20	22	27
	4	13	16	21	22	24	27

		Filter element design - R Series					N Series	Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHD 051	2	39	41	51	54	59	64	35	37	48	51	58
	3	45	46	54	56	61	65	41	43	52	54	60
	4	50	52	58	58	62	65	47	49	56	56	61
	5	56	57	61	62	63	65	53	53	57	59	63
FHD 326	1	93	99	131	142	154	171	83	87	117	120	146
	2	136	141	163	166	173	176	119	128	149	151	163
	3	152	159	171	174	175	177	139	148	161	163	170
FHD 333	2	175	184	224	230	245	249	147	162	199	201	225
	3	204	217	241	245	247	252	179	196	221	224	238
	4	216	224	242	247	253	255	196	204	223	225	239

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
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.

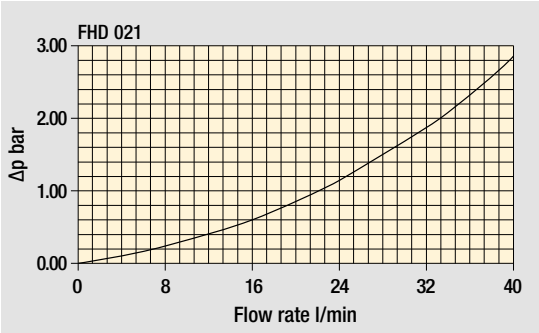
Hydraulic symbols

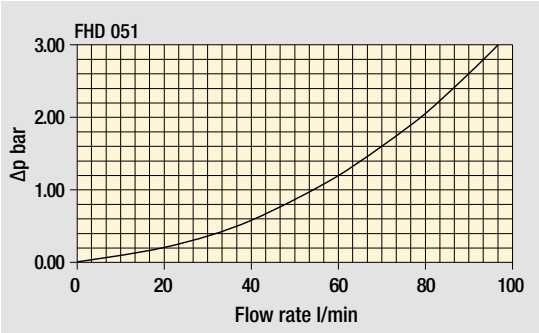
Filter series	Style S	Style B	Style B
FHD 021	•		
FHD 051	•	•	
FHD 326	•		•
FHD 333	•		•

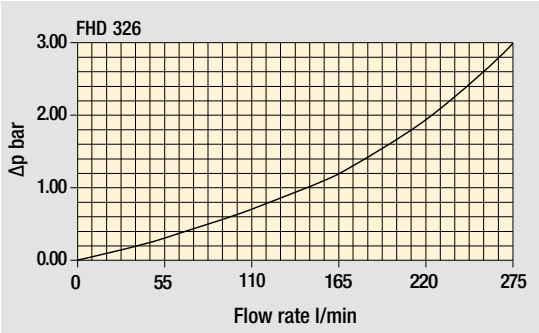


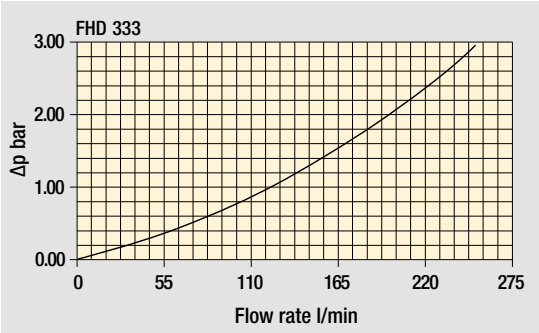
Pressure drop

Filter housings Δp pressure drop

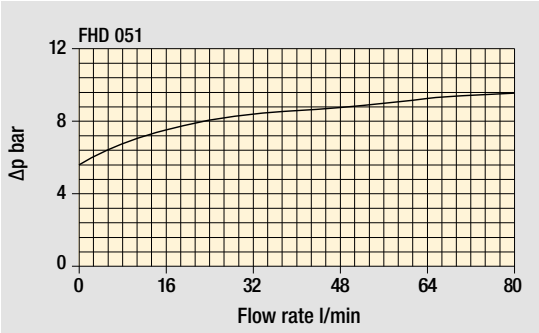


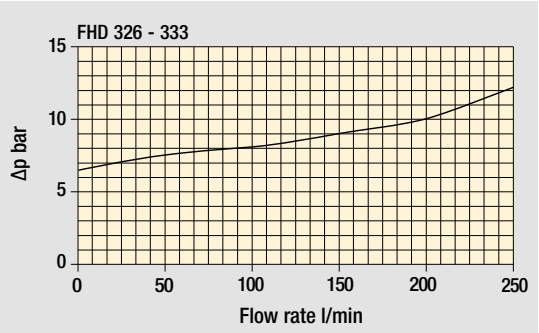






Bypass valve pressure drop





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.

FHD FHD021

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHD021 | 4 | S | A | G1 | A06 | H | P01

Series and size
FHD021

Length
2 | **3** | **4**

Valves
S Without bypass

Seals
A NBR
V FPM

Connections
G1 G 1/2”
G2 1/2” NPT
G3 SAE 8 - 3/4” - 16 UNF

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		Filtration rating Axx	Filtration rating M25
N	20 bar		•
H	210 bar	•	

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP011 | 4 | A06 | A | H | P01

Element series and size
HP011

Element length
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		Filtration rating Axx	Filtration rating M25
N	20 bar		•
H	210 bar	•	•

Execution
P01 MP Filtri standard
Pxx Customized

ACCESSORIES

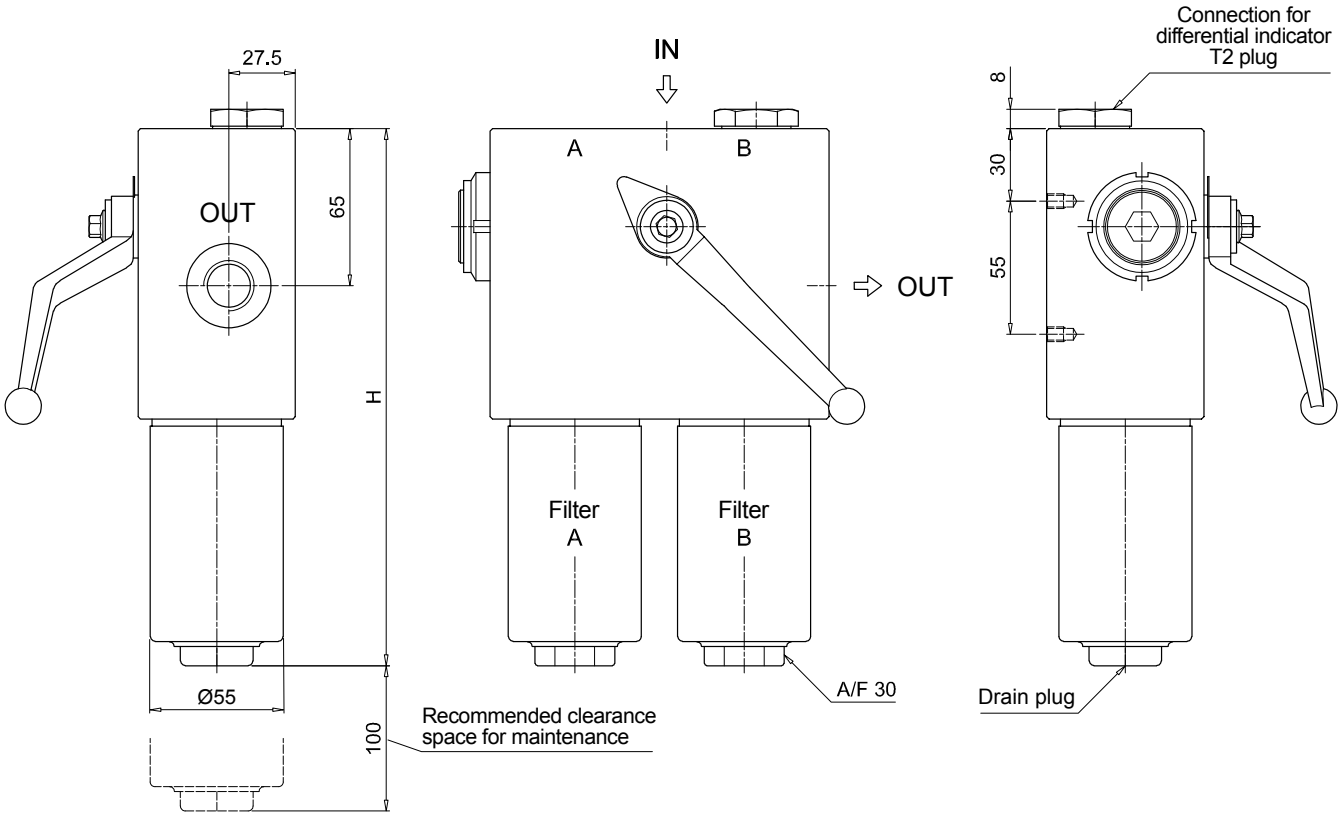
Differential indicators		page
DEA	Electrical differential indicator	577
DEH	Hazardous area electronic differential indicator	577-578
DEM	Electrical differential indicator	578-579
DLA	Electrical / visual differential indicator	579-580
DLE	Electrical / visual differential indicator	580
DTA	Electronic differential indicator	581
DVA	Visual differential indicator	581
DVM	Visual differential indicator	581

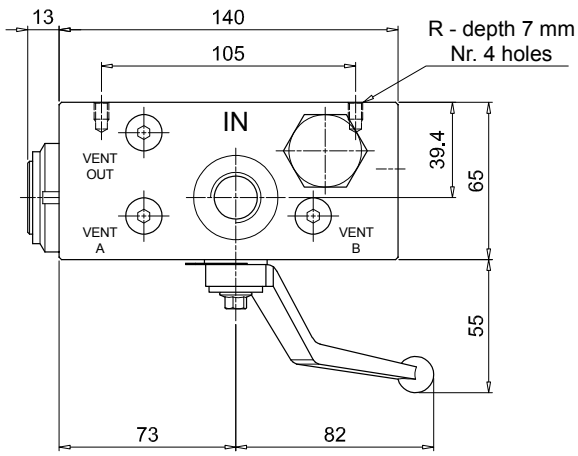
Additional features		page
T2	Plug	582

Dimensions

FHD021	
Filter length	**H [mm]**
2	172
3	222
4	272

Connections	R
G1	M6
G2 - G3	1/4" UNC





FHD FHD051 - FHD326 - FHD333

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHD326 | 3 | S | A | G1 | M25 | N | P01

Series and size

FHD051 | **FHD326** | **FHD333**

Length	FHD051	FHD326	FHD333
1		•	
2	•	•	•
3	•	•	•
4	•		•
5	•		

Valves

S	Without bypass
B	With bypass 6 bar

Seals

A	NBR
V	FPM

Connections	FHD051	FHD326	FHD333
G1	G 3/4”	G 1 1/4”	-
G2	3/4” NPT	-	-
G3	G 1/2”	1 1/4” NPT	-
G4	1/2” NPT	SAE 20 - 1 5/8” - 12 UN	-
G5	SAE 8 - 3/4” - 16 UNF	-	-
G6	SAE 12 - 1 1/16” - 12 UN	-	-
F1	-	-	1 1/2” SAE 6000 psi/M
F2	-	-	1 1/2” 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		Filtration rating Axx	Filtration rating M25
N	20 bar		•
R	20 bar	•	•
S	210 bar	•	•

Execution	
P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP320 | 3 | M25 | A | N | P01

Element series and size

	FHD051	FHD326	FHD333
HP050	•		
HP320		•	•

Element length	HP050	HP320
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		Filtration rating Axx	Filtration rating M25
N	20 bar		•
R	20 bar	•	•
S	210 bar	•	•

Execution	
P01	MP Filtri standard
Pxx	Customized

ACCESSORIES

Differential indicators		page
DEA	Electrical differential indicator	577
DEH	Hazardous area electronic differential indicator	577-578
DEM	Electrical differential indicator	578-579
DLA	Electrical / visual differential indicator	579-580
DLE	Electrical / visual differential indicator	580
DTA	Electronic differential indicator	581
DVA	Visual differential indicator	581
DVM	Visual differential indicator	581

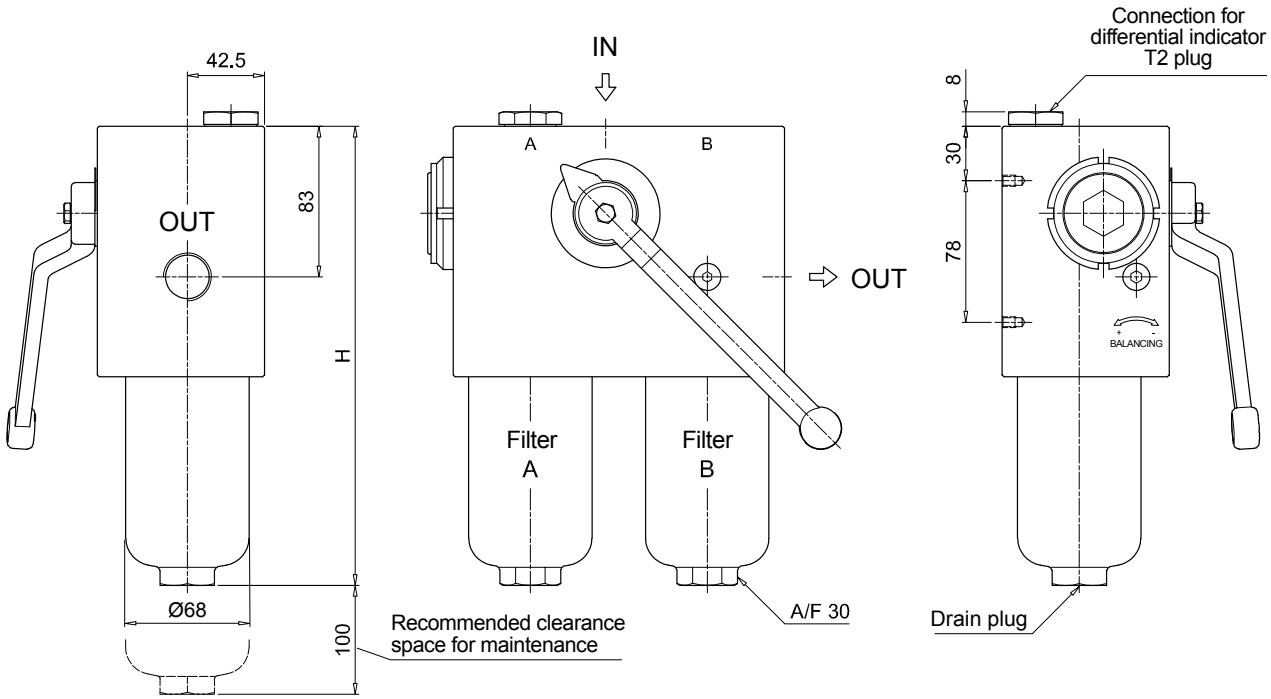
Additional features		page
T2	Plug	582

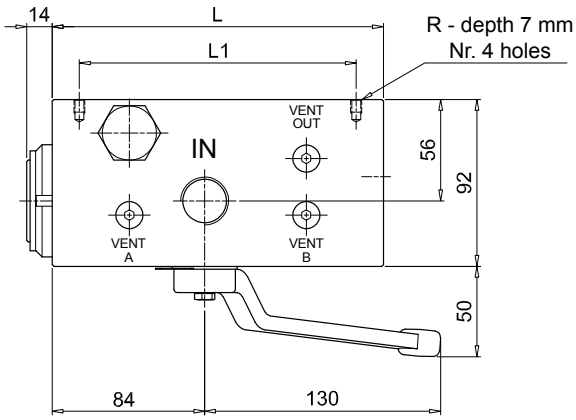
Dimensions

FHD051	
Filter length	**H [mm]**
2	253
3	295
4	343
5	465

Connections	**R**
G1	M6
G2	1/4" UNC
G3	M6
G4-G5-G6	1/4" UNC

Valves	**L [mm]**	**L1 [mm]**
S	168	138
B	182.5	152.5

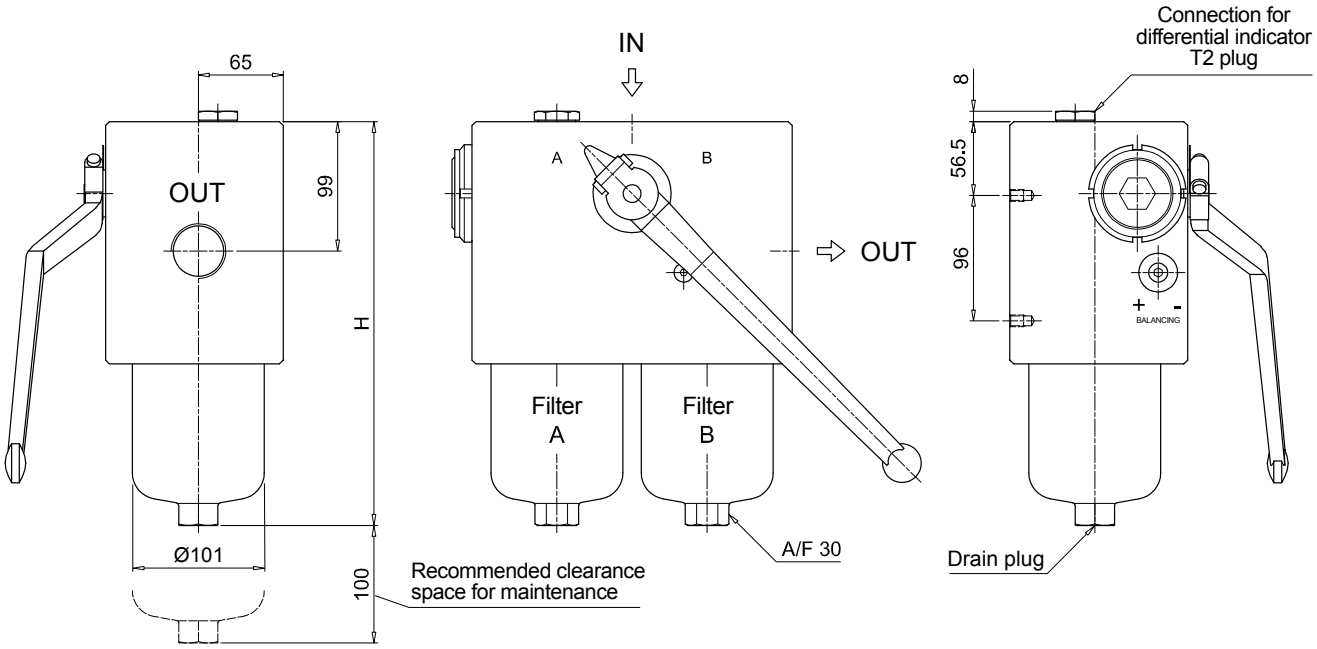


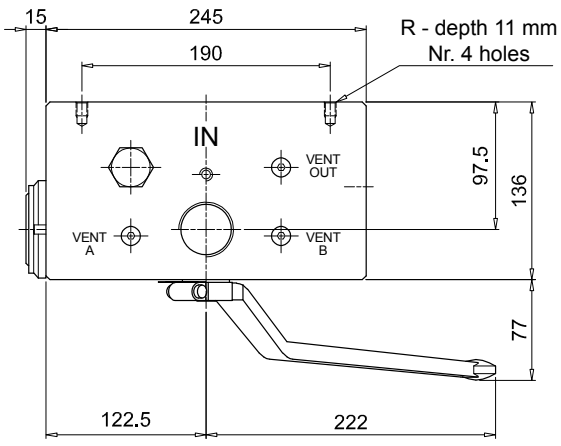


Dimensions

FHD326	
Filter length	**H [mm]**
1	309
2	432
3	564

Connections	R
G1	M10
G2 - G3	3/8" UNC

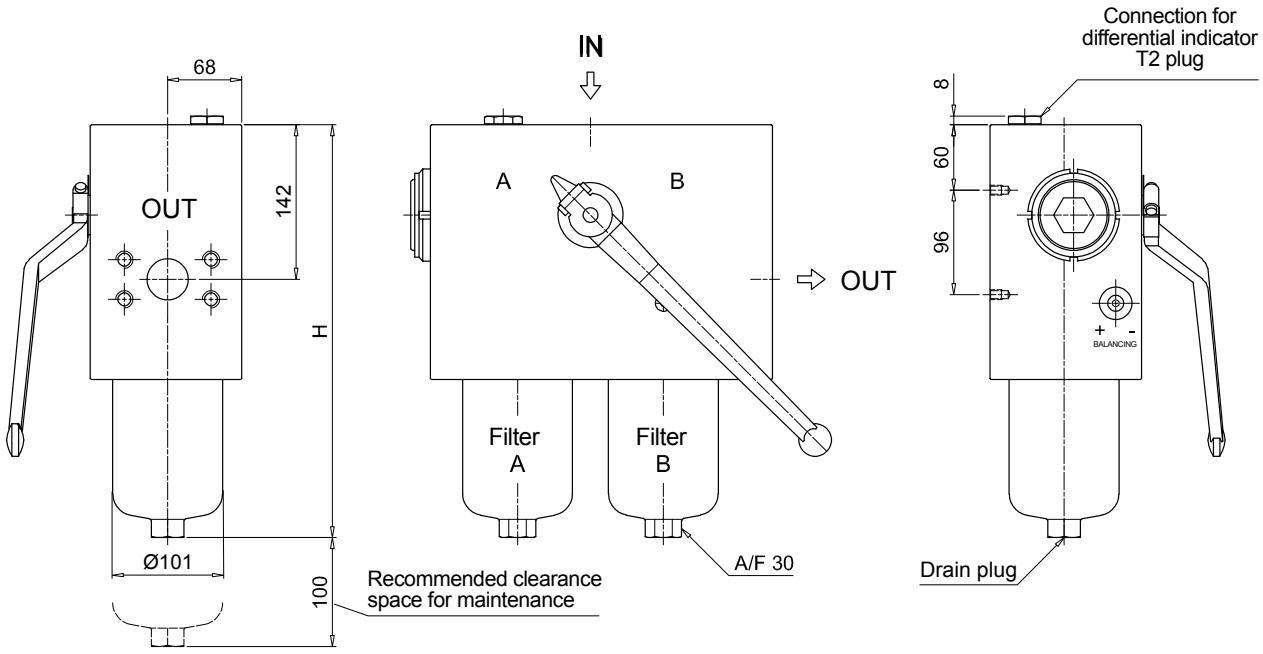


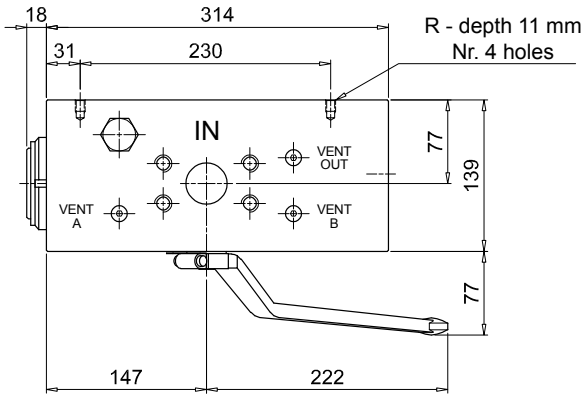


Dimensions

FHD333	
Length 2 - 3	
Filter length	**H [mm]**
2	479
3	612

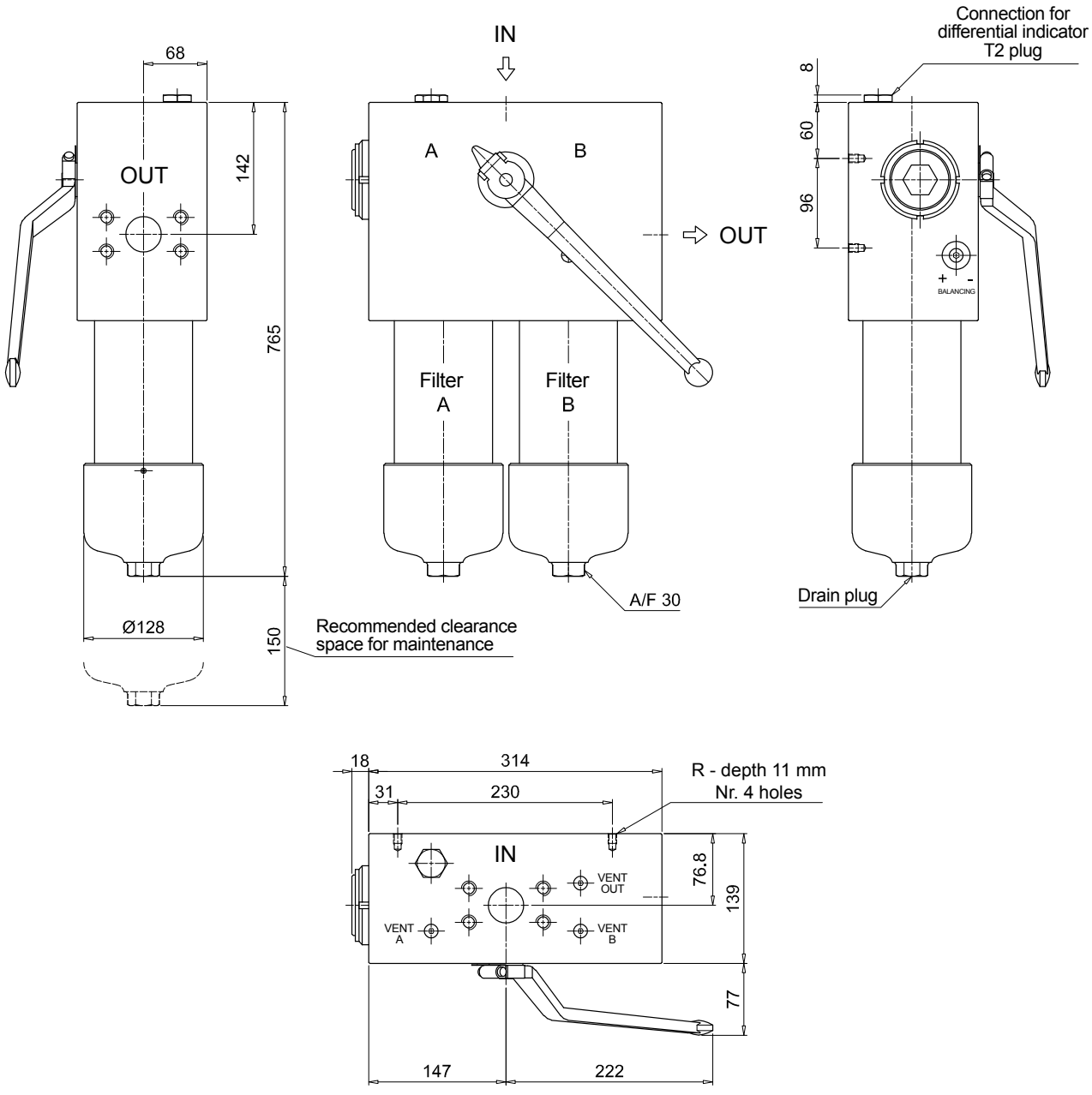
Connections	**R**
F1	M10
F2	3/8" UNC



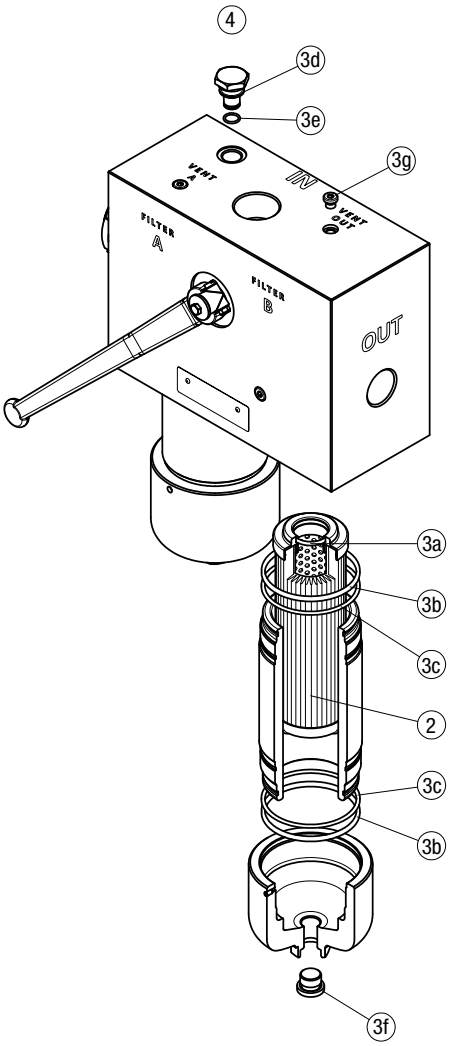


Dimensions

FHD333	
Length 4	
Connections	**R**
F1	M10
F2	3/8" UNC



FHD 021 - 051 - 326 - 333



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FHD 021	See order table	02050511	02050512	T2H	T2V
FHD 051		02050420	02050421		
FHD 326-333		02050377	02050378		