

# FZD series

Maximum working pressure up to 35 Mpa (350 bar) - Flow rate up to 90 l/min



# FILTER SIZING

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**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 ÷ 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 Δpc of the housing is proportional to the fluid density (kg/dm<sup>3</sup>); all the graphs in the catalogue are referred to mineral oil with density of 0.86 kg/dm<sup>3</sup>.

The filter element pressure drop Δpe is proportional to its viscosity (mm<sup>2</sup>/s), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm<sup>2</sup>/s (cSt).

**Sizing data for single filter element, head at top**

Δpc = Filter housing pressure drop [bar]

Δpe = 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 mm<sup>2</sup>/s (cSt)

V2 = operating oil viscosity in mm<sup>2</sup>/s (cSt)

**Filter element pressure drop calculation with an oil viscosity different than 30 mm<sup>2</sup>/s (cSt)**

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

$\Delta p Tot. = \Delta pc + \Delta pe$

**Verification formula**

$\Delta p Tot. \leq \Delta p max allowed$

**Maximum total pressure drop (Δp max) allowed by a new and clean filter**

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

**Generic filter calculation example**

Application data:

Tank top return filter

Pressure Pmax = 10 bar

Flow rate Q = 120 l/min

Viscosity V2 = 46 mm<sup>2</sup>/s (cSt)

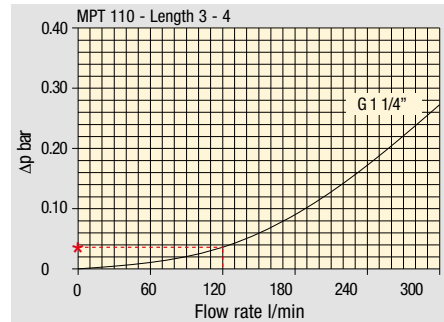
Oil density = 0.86 kg/dm<sup>3</sup>

Required filtration efficiency = 25 μm with absolute filtration

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

Calculation:

Δpc = 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<sup>3</sup> in compliance with ISO 3968. Δp varies proportionally with density.

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

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

$\Delta p Tot. = 0.03 + 0.37 = 0.4 bar$

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 mm<sup>2</sup>/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	-	-
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 mm<sup>2</sup>/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	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	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"



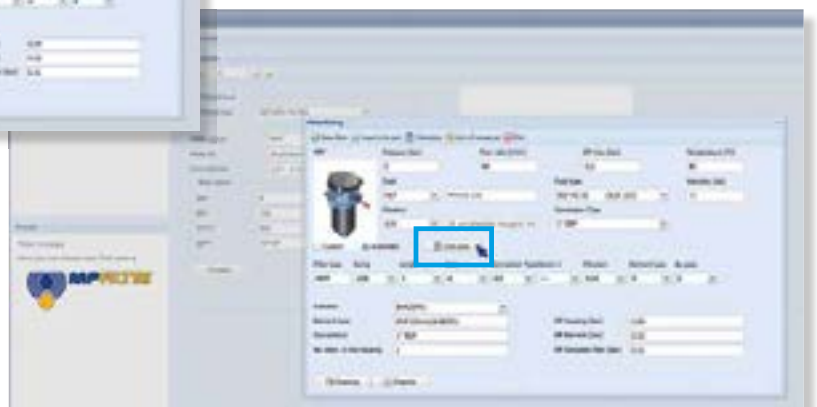
**Step 5**

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"

# FZD series

Maximum working pressure up to 35 Mpa (350 bar) - Flow rate up to 90 l/min





## Description

## Technical data

### Stainless steel high pressure filters

#### Duplex

**Maximum working pressure up to 35 Mpa (350 bar)**  
**Flow rate up to 90 l/min**

FZD is a range of stainless steel 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 3/4", for a maximum flow rate of 90 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Balancing valve integrated in the changeover lever, 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
- 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
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- System where shut-down causes high costs
- System where shut-down causes safety issues

#### Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

#### Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

#### Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

#### Bypass valve

Opening pressure 6 bar ±10%

#### Temperature

From -50 °C to +120 °C

#### Note

FZD filters are provided for vertical mounting.

#### Δp element type

Fluid flow through the filter element from OUT to IN.

Microfibre filter elements - series R: 20 bar.

Element series "R":

- End cap: Nylon
- Core tube: Tinned Steel
- External/Internal support: Wire mesh Epox painted
- Media/Support/Pre-filter: Microfibre/Syntetic

Microfibre filter elements - series H-S: 210 bar.

Element series "H - S":

- End cap: Tinned Steel
- Core tube: Tinned Steel
- External support: Wire mesh Epox painted
- Internal support: Wire mesh Stainless Steel
- Media/Support/Pre-filter: Microfibre/Syntetic

Stainless Steel Microfibre filter elements series U: 210 bar.

Element series "U":

- End cap: Stainless Steel
- Core tube: Stainless Steel
- External support: Stainless Steel
- Internal support: Stainless Steel
- Media/Support/Pre-filter: Microfibre/Syntetic

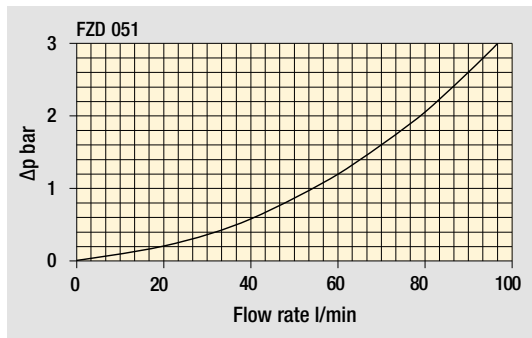
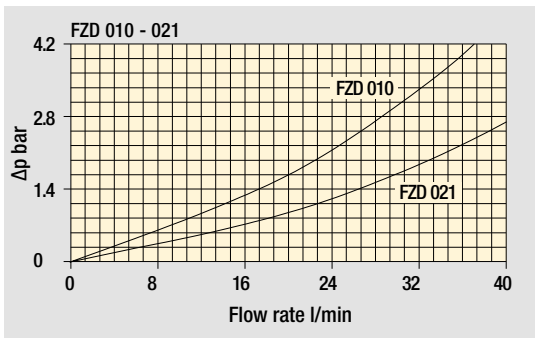


## Weights [kg] and volumes [dm<sup>3</sup>]

Filter series	Weights [kg]					Volumes [dm <sup>3</sup> ]							
	Length	1	2	3	4	5	Length	1	2	3	4	4	
<b>FZD 010</b>	-	-	7.9	-	-	-	-	-	0.10	-	-	-	-
<b>FZD 021</b>	-	-	9.6	9.8	10.3	-	-	-	0.06	0.12	0.22	-	-
<b>FZD 051</b>	-	-	17.4	18.0	19.0	20.3	-	-	0.31	0.41	0.53	0.83	-



Filter housings  $\Delta p$  pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  
 $\Delta p$  varies proportionally with density.

Flow rates [l/min]

Filter series	Length	Filter element design - H Series					Filter element design - U Series				
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
<b>FZD 010</b>	<b>2</b>	4	5	7	8	11	4	5	7	8	11
	<b>3</b>	5	6	11	12	16	5	6	11	12	16
<b>FZD 021</b>	<b>3</b>	9	11	16	18	20	9	11	16	18	20
	<b>4</b>	10	12	17	19	21	10	12	17	19	21

Filter series	Length	Filter element design - R Series					Filter element design - S Series					Filter element design - U Series				
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
<b>FZD 051</b>	<b>2</b>	39	41	51	54	59	35	37	48	51	58	35	37	48	51	58
	<b>3</b>	45	46	54	56	61	41	43	52	54	60	41	43	52	54	60
	<b>4</b>	50	52	58	58	62	47	49	56	56	61	47	49	56	56	61
	<b>5</b>	56	57	61	62	63	53	53	57	59	63	53	53	57	59	63

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

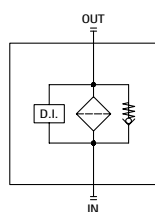
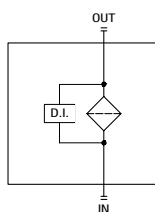
The reference fluid has a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

Please, contact our Sales Department for further additional information.

Hydraulic symbols

Filter series	Style S	Style B
<b>FZD 010</b>	•	
<b>FZD 021</b>	•	
<b>FZD 051</b>	•	•



## Designation & Ordering code

### COMPLETE FILTER

Series and size		Configuration example: <b>FZD021</b>   <b>4</b>   <b>S</b>   <b>A</b>   <b>G1</b>   <b>A06</b>   <b>H</b>   <b>P01</b>										
<b>FZD010</b>	<b>FZD021</b>											
Length	FZD010	FZD021										
2	•	•										
3		•										
4		•										
Valves												
<b>S</b> Without bypass												
Seals												
<b>A</b> NBR												
<b>V</b> FPM												
Connections	FZD010	FZD021										
<b>G1</b>	G 3/8"	G 1/2"										
<b>G2</b>	3/8" NPT	1/2" NPT										
<b>G3</b>	-	SAE 8 - 3/4" - 16 UNF										
Filtration rating (filter media)												
<b>A03</b>	Inorganic microfiber	3 µm										
<b>A06</b>	Inorganic microfiber	6 µm										
<b>A10</b>	Inorganic microfiber	10 µm										
<b>A16</b>	Inorganic microfiber	16 µm										
<b>A25</b>	Inorganic microfiber	25 µm										
Element Δp												
<b>H</b> 210 bar												
<b>U</b> 210 bar, stainless steel filter element												
Execution												
<b>P01</b> MP Filtri standard												
<b>Pxx</b> Customized												

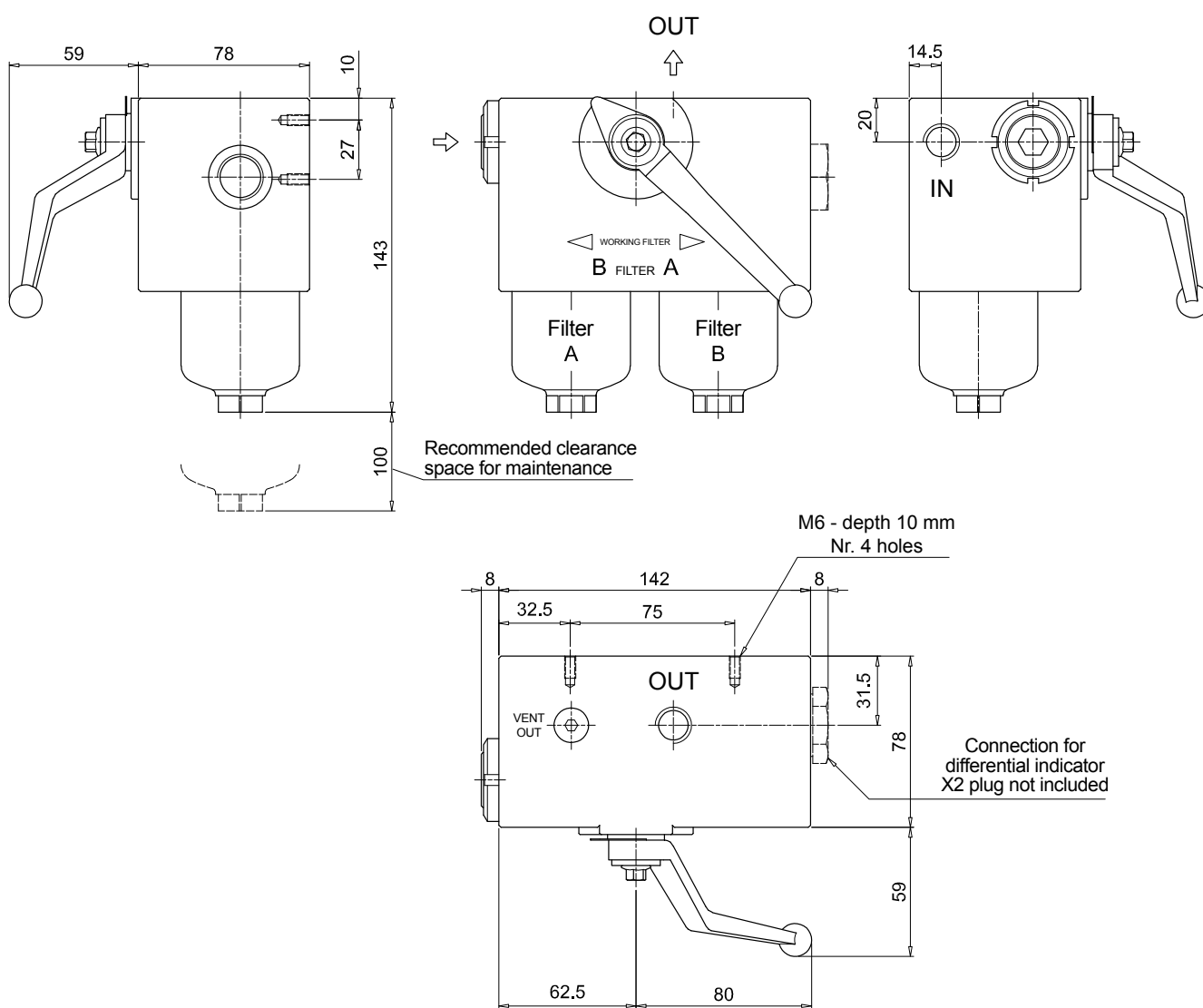
### FILTER ELEMENT

Element series and size		Configuration example: <b>HP011</b>   <b>4</b>   <b>A06</b>   <b>A</b>   <b>H</b>   <b>P01</b>										
<b>HP010</b>	<b>HP011</b>											
Element length	HP010	HP011										
2	•	•										
3		•										
4		•										
Filtration rating (filter media)												
<b>A03</b>	Inorganic microfiber	3 µm										
<b>A06</b>	Inorganic microfiber	6 µm										
<b>A10</b>	Inorganic microfiber	10 µm										
<b>A16</b>	Inorganic microfiber	16 µm										
<b>A25</b>	Inorganic microfiber	25 µm										
Seals												
<b>A</b> NBR												
<b>V</b> FPM												
Element Δp												
<b>H</b> 210 bar												
<b>U</b> 210 bar, stainless steel filter element												
Execution												
<b>P01</b> MP Filtri standard												
<b>Pxx</b> Customized												

### ACCESSORIES

Differential indicators	page		page
<b>DEH</b> Hazardous area electronic differential indicator	628	<b>DVX</b> Visual differential indicator	629
<b>DEX</b> Electrical differential indicator	629	<b>DVY</b> Visual differential indicator	630
<b>DLX</b> Electrical / visual differential indicator	629		
Additional features	page		
<b>X2</b> Plug	630		

FZD010



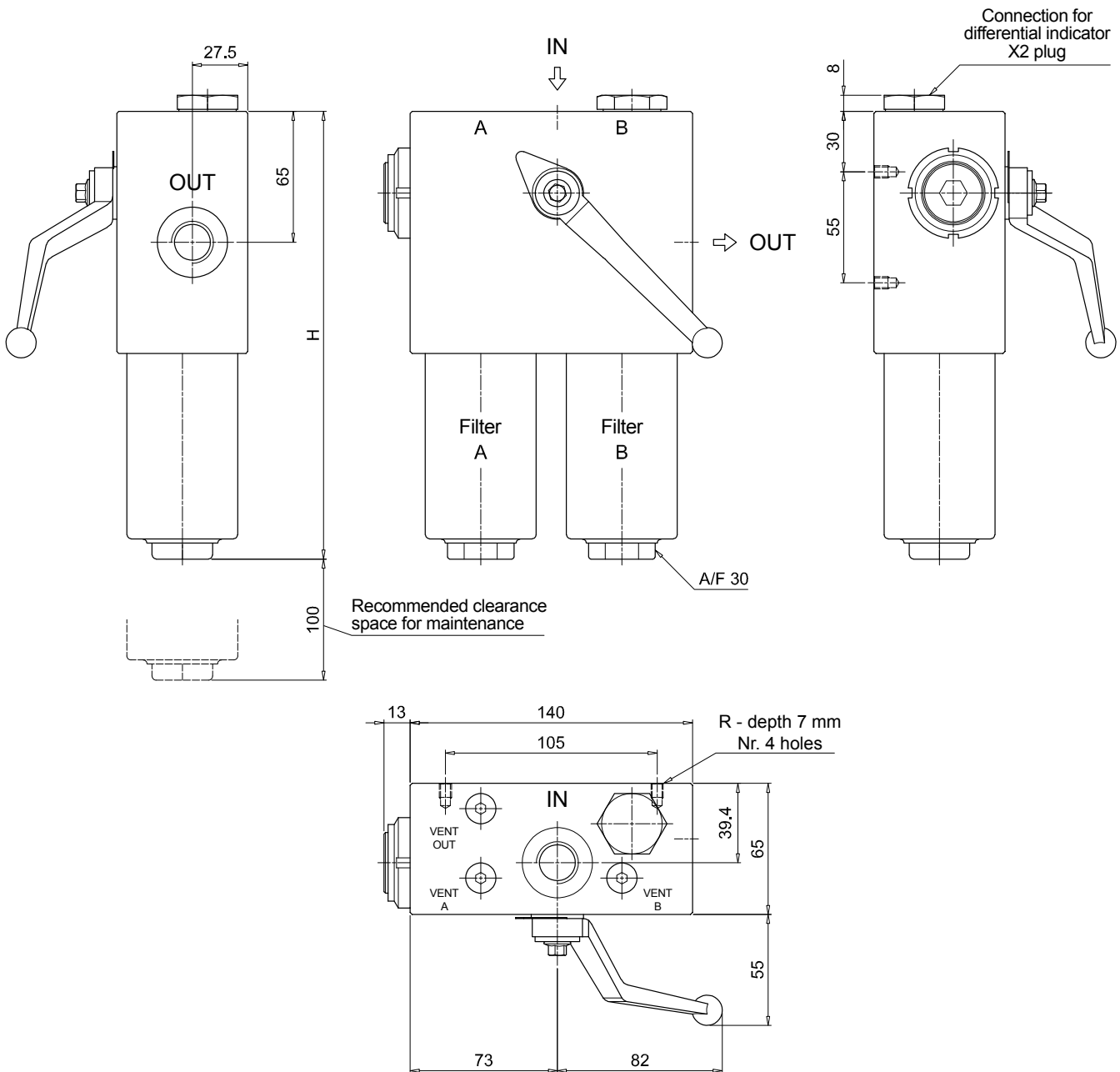
## Dimensions

### FZD021

Filter length	H [mm]
<b>2</b>	172
<b>3</b>	222
<b>4</b>	272

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





## Designation & Ordering code

### COMPLETE FILTER

<b>Series and size</b> <b>FZD051</b>	Configuration example: <b>FZD051</b>   <b>3</b>   <b>B</b>   <b>A</b>   <b>G3</b>   <b>A03</b>   <b>U</b>   <b>P01</b>								
<b>Length</b> <b>2</b>   <b>3</b>   <b>4</b>   <b>5</b>									
<b>Valves</b> <b>S</b> Without bypass <b>B</b> With bypass 6 bar									
<b>Seals</b> <b>A</b> NBR <b>V</b> FPM									
<b>Connections</b> <b>G1</b> G 3/4" <b>G2</b> 3/4" NPT <b>G3</b> G 1/2" <b>G4</b> 1/2" NPT <b>G5</b> SAE 8 - 3/4" - 16 UNF <b>G6</b> SAE 12 - 1 1/16" - 12 UN									
<b>Filtration rating (filter media)</b>									
<b>A03</b> Inorganic microfiber	3 µm								
<b>A06</b> Inorganic microfiber	6 µm								
<b>A10</b> Inorganic microfiber	10 µm								
<b>A16</b> Inorganic microfiber	16 µm								
<b>A25</b> Inorganic microfiber	25 µm								
			<b>Valves</b>				<b>Execution</b>		
			<b>R</b> 20 bar		<b>S</b>   <b>B</b>		<b>P01</b> MP Filtri standard		
			<b>S</b> 210 bar		•		<b>Pxx</b> Customized		
			<b>U</b> 210 bar, stainless steel filter element		• •				

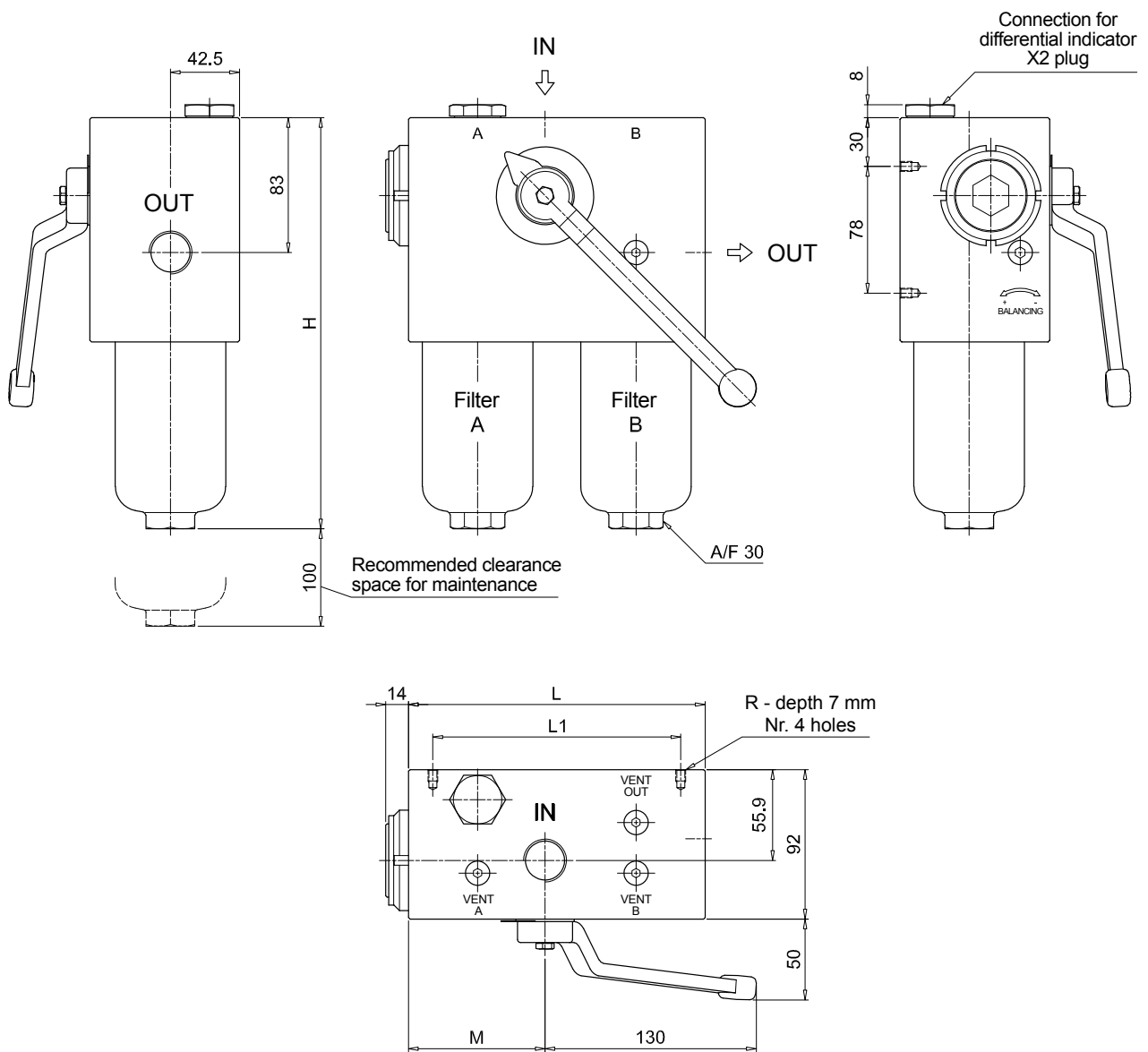
### FILTER ELEMENT

<b>Element series and size</b> <b>HP050</b>	Configuration example: <b>HP050</b>   <b>3</b>   <b>A03</b>   <b>A</b>   <b>U</b>   <b>P01</b>						
<b>Element length</b> <b>2</b>   <b>3</b>   <b>4</b>   <b>5</b>							
<b>Filtration rating (filter media)</b>							
<b>A03</b> Inorganic microfiber	3 µm						
<b>A06</b> Inorganic microfiber	6 µm						
<b>A10</b> Inorganic microfiber	10 µm						
<b>A16</b> Inorganic microfiber	16 µm						
<b>A25</b> Inorganic microfiber	25 µm						
			<b>Seals</b>		<b>Element Δp</b>		<b>Execution</b>
			<b>A</b> NBR		<b>R</b> 20 bar		<b>P01</b> MP Filtri standard
			<b>V</b> FPM		<b>S</b> 210 bar		<b>Pxx</b> Customized
					<b>U</b> 210 bar, stainless steel filter element		

### ACCESSORIES

<b>Differential indicators</b>	page		page
<b>DEH</b> Hazardous area electronic differential indicator	628	<b>DVX</b> Visual differential indicator	629
<b>DEX</b> Electrical differential indicator	629	<b>DVY</b> Visual differential indicator	630
<b>DLX</b> Electrical / visual differential indicator	629		
<b>Additional features</b>	page		
<b>X2</b> Plug	630		

FZD051			
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]	M [mm]
S	168	138	84
B	182.5	152.5	98.5





# FZD SPARE PARTS

Order number for spare parts

**FZD 010**

**FZD 021 - FZD 051**

Q.ty:

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

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

Item:	Q.ty: 1 pc. <b>2</b>	Q.ty: 1 pc. <b>3</b> (3a ÷ 3g)		Q.ty: 1 pc. <b>4</b>	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
<b>FZD 010</b>	See order table	02050613	02050655		
<b>FZD 021</b>		02050511	02050512	X2H	X2V
<b>FZD 051</b>		02050420	02050421		