

Stainless steel high pressure  
filters Duplex FZD series



 HYDRAULIC  
COMPONENTS  
& FLUID CONTAMINATION  
CONTROL



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# HYDRAULIC FILTRATION PRODUCTS

STAINLESS STEEL HIGH PRESSURE FILTERS



PASSION TO PERFORM





## A WORLDWIDE LEADER IN THE FIELD OF HYDRAULIC FILTRATION EQUIPMENT.

Our company started life in 1964, when Bruno Pasotto decided to attempt to cater for the requests of a market still to be fully explored, with the study, design, development, production and marketing of a vast range of filters for hydraulic equipment, capable of satisfying the needs of manufacturers in all sectors. The quality of our products, our extreme competitiveness compared with major international producers and our constant activities of research, design and development has made us a worldwide leader in the field of hydraulic circuit filtering. Present for over 50 years in the market, we have played a truly decisive role in defining our sector, and by now we are a group capable of controlling our entire chain of production, monitoring all manufacturing processes to guarantee superior quality standards and to provide concrete solutions for the rapidly evolving needs of customers and the market.

## MARKET LEADER



Our work is based on a skillful interaction between advanced technology and fine workmanship, **customizing products according to specific market requests**, focusing strongly on innovation and quality, and following every step in the manufacturing of both standard and special products, fully respecting customer expectations.



Our customer-oriented philosophy, which enables us to satisfy all customer requests **rapidly and with personalized products**, makes us a **dynamic and flexible enterprise**. The possibility of constantly controlling and monitoring the entire production process is essential to allow us to guarantee the quality of our products.

## WORLDWIDE PRESENCE

Our foreign Branches enable us to offer a diversified range of products that allow us to successfully face the aggressive challenge of international competition, and also to maintain a stable presence at a local level.

The Group boasts **9** business branches



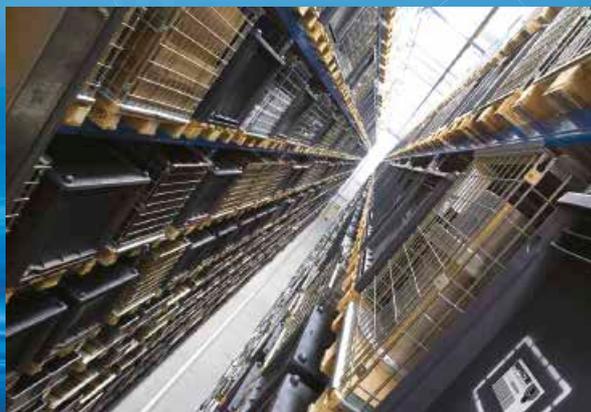
## TECHNOLOGY

Our constant **quest for excellence in quality and technological innovation** allows us to offer only the best solutions and services for applications in many fields, including general industry, test rigs, lubrication, heavy engineering, renewable energies, naval engineering, offshore engineering, aviation systems, emerging technologies and mobile plant (i.e. tractors, excavators, concrete pumps, platforms).



## AND PRODUCTION

Our high level of technological expertise means **we can rely entirely on our own resources, without resorting to external providers.** This in turn enables us to satisfy a growing number of customer requests, also exploiting our constantly updated range of machines and equipment, featuring **fully-automated workstations** capable of **24-hour production.**





### SUCTION FILTERS

Flow rates  
up to 875 l/min

Mounting:  
- Tank immersed  
- In-Line  
- In tank with  
shut off valve  
- In tank  
with flooded suction

### RETURN FILTERS

Flow rates  
up to 3000 l/min

Pressure  
up to 20 bar

Mounting:  
- In-Line  
- Tank top  
- In single  
and duplex designs

### RETURN / SUCTION FILTERS

Flow rates  
up to 300 l/min

Pressure  
up to 80 bar

Mounting:  
- In-Line  
- Tank top

### SPIN-ON FILTERS

Flow rates  
up to 365 l/min

Pressure  
up to 35 bar

Mounting:  
- In-Line  
- Tank top

### LOW & MEDIUM PRESSURE FILTERS

Flow rates  
up to 3000 l/min

Pressure  
up to 80 bar

Mounting:  
- In-Line  
- Parallel manifold version  
- In single  
and duplex designs

### HIGH PRESSURE FILTERS

Flow rates  
up to 750 l/min

Pressure from 110 bar  
up to 560 bar

Mounting:  
- In-Line  
- Manifold  
- In single  
and duplex designs

# PRODUCT RANGE

MP Filtri can offer a vast and articulated range of products for the global market, suitable for all industrial sectors using hydraulic equipment.

This includes filters (suction, return, return/suction, spin-on, pressure, stainless steel pressure) and structural components (motor/pump bell-housings, transmission couplings, damping rings, foot brackets, aluminium tanks, cleaning covers).

We can provide all the skills and solutions required by the modern hydraulics industry to monitor contamination levels and other fluid conditions.

Mobile filtration units and a full range of accessories allow us to supply everything necessary for a complete service in the hydraulic circuits.



## STAINLESS STEEL HIGH PRESSURE FILTERS

Flow rates up to 125 l/min

Pressure from 320 bar up to 1000 bar

Mounting:

- In-Line
- Manifold
- In single and duplex designs

## CONTAMINATION MONITORING PRODUCTS

- Online, in-line particle counters
- Off-line bottle sampling products
- Fully calibrated using relevant ISO standards
- A wide range of variants to support fluid types and communication protocols

## MOBILE FILTRATION UNITS

Flow rates from 15 l/min up to 200 l/min

## POWER TRANSMISSION PRODUCTS

- Aluminium bell-housings for motors from 0.12 kW to 400 kW
- Couplings in Aluminium Cast Iron - Steel
- Damping rings
- Foot bracket
- Aluminium tanks
- Cleaning covers

## TANK ACCESSORIES

- Oil filler and air breather plugs
- Optical and electrical level gauges
- Pressure gauge valve selectors
- Pipe fixing brackets
- Pressure gauges

# FZD series

Maximum working pressure up to 35 Mpa (350 bar) - Flow rate up to 60 l/min



## Description

## Technical data

### Stainless steel high pressure filters

#### Duplex

**Maximum working pressure up to 35 Mpa (350 bar)**  
**Flow rate up to 60 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, available for FZD051, 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

#### 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  $\pm$ 10%

#### Temperature

From -50 °C to +120 °C

#### Note

FZD filters are provided for vertical mounting

#### $\Delta p$ 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 Epoxy painted
- Media/Support/Pre-filter: Microfibre/Synthetic

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

Element series "H - S":

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

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/Synthetic



## 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 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>.

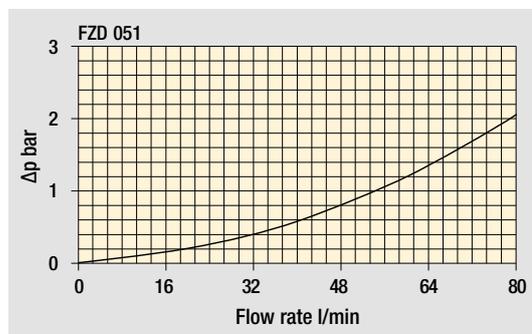
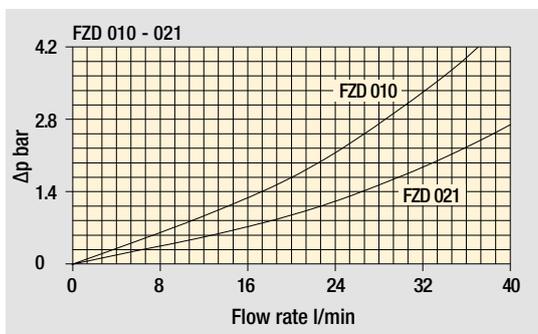
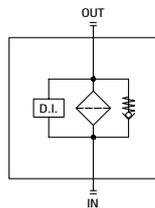
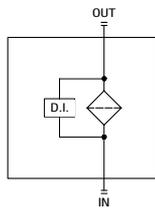
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

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
<b>FZD 010</b>	•	
<b>FZD 021</b>	•	
<b>FZD 051</b>	•	•



## Pressure drop 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.

## Designation & Ordering code

### COMPLETE FILTER

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

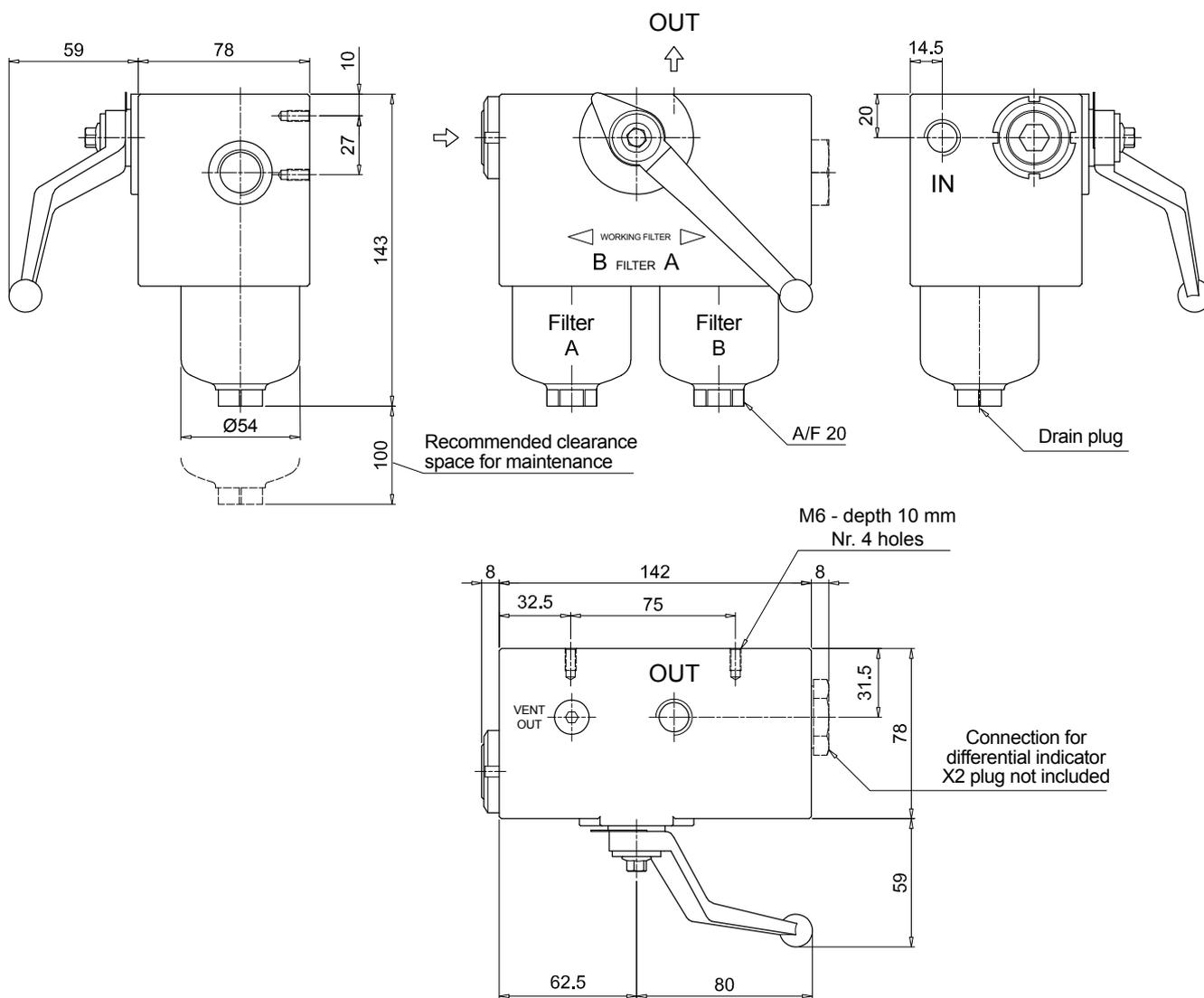
### FILTER ELEMENT

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

### ACCESSORIES

Differential indicators		page			page
DEH	Hazardous area electronic differential indicator	642	DVX	Visual differential indicator	643
DEX	Electrical differential indicator	643	DVY	Visual differential indicator	644
DLX	Electrical / visual differential indicator	643			
<b>Additional features</b>		page			
X2	Plug	644			

FZD010



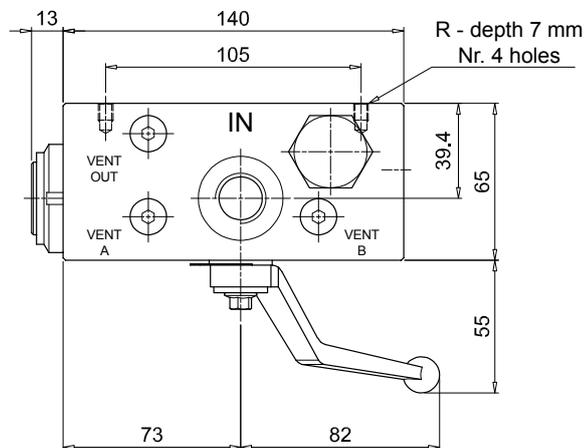
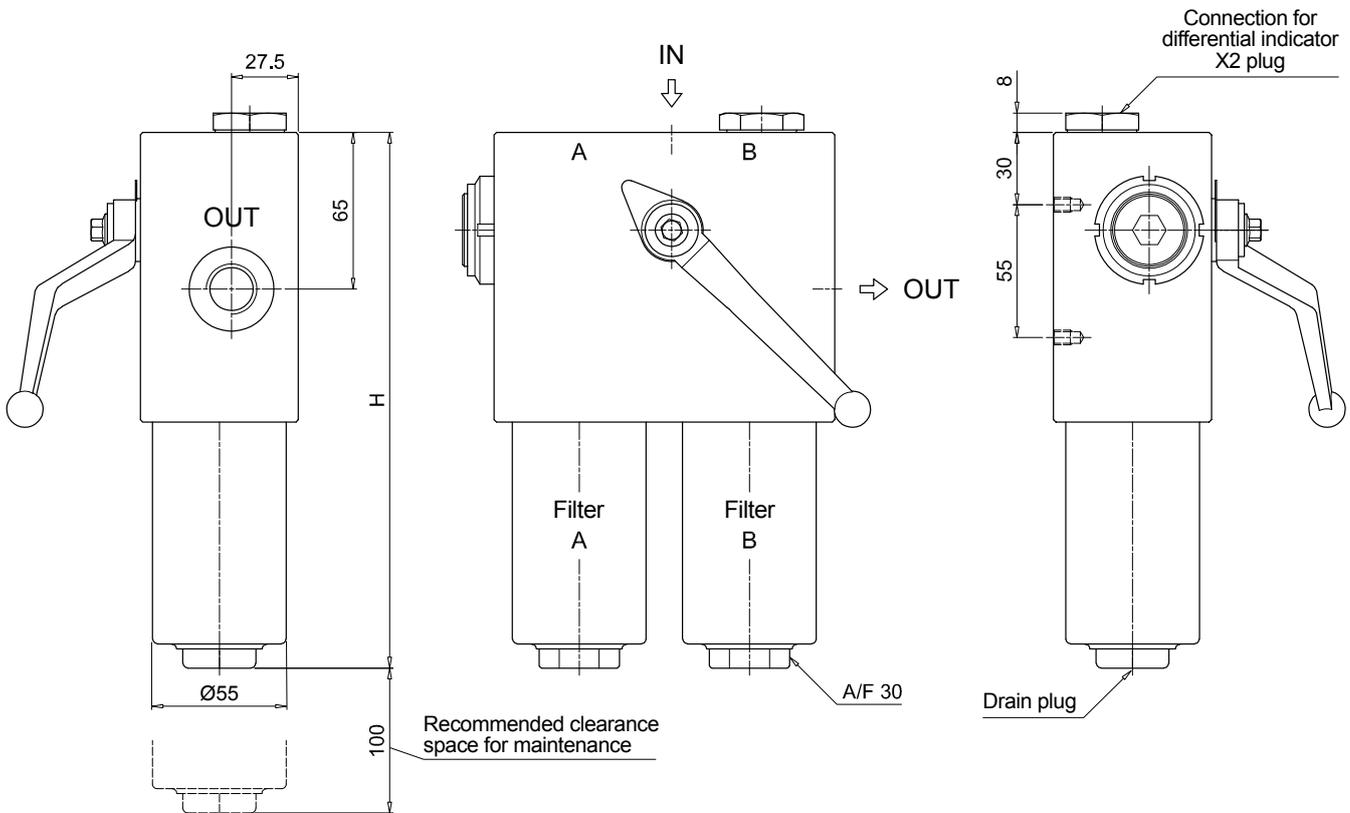
## Dimensions

### 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> 2   3   4   5								
<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>Element Δp</b>		<b>Valves</b>		<b>Execution</b>			
	<b>R</b> 20 bar	<b>S</b> 210 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		•	•				

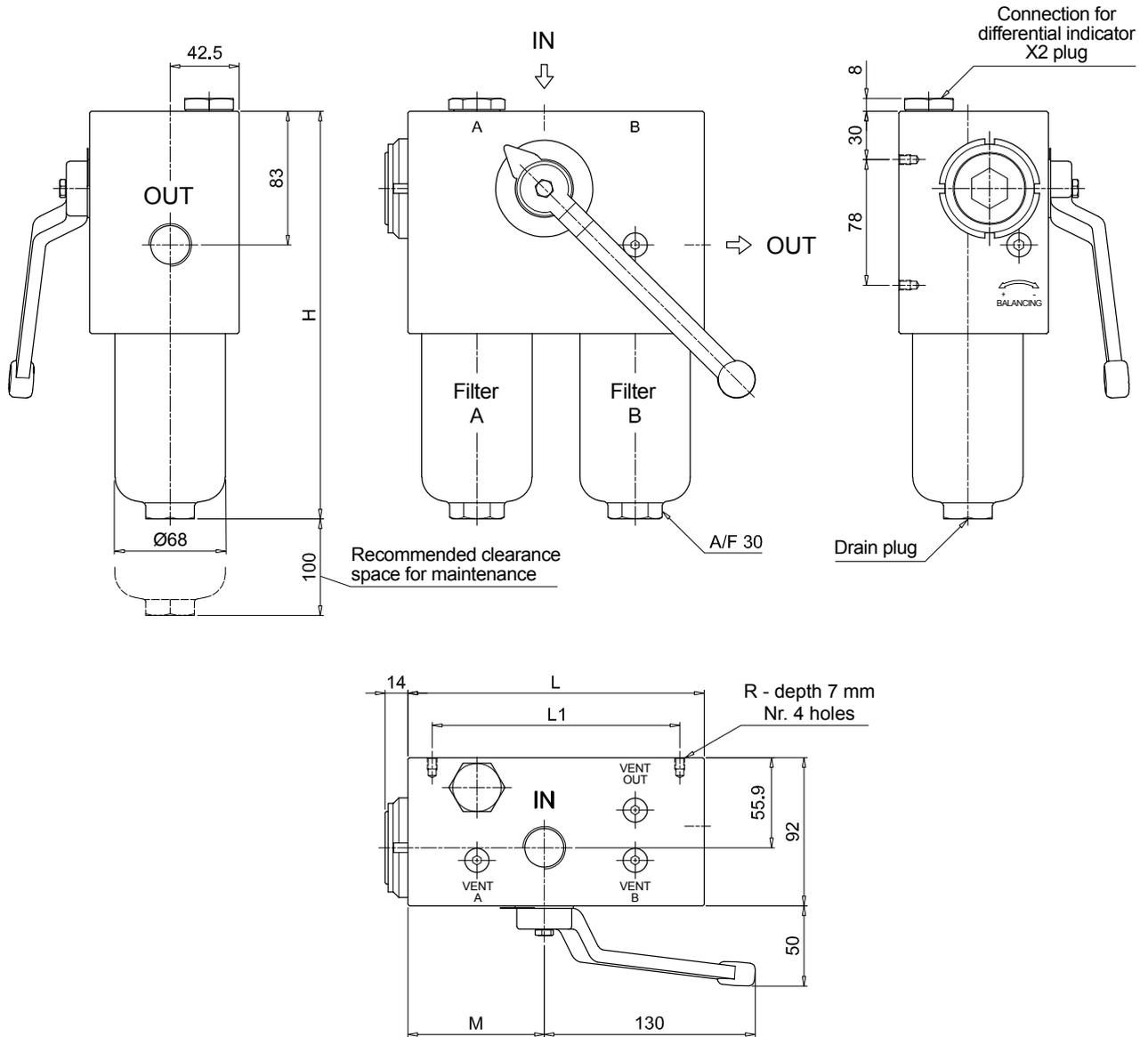
### FILTER ELEMENT

<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> 2   3   4   5						
<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
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<b>Additional features</b>	page		
<b>X2</b> Plug	644		

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

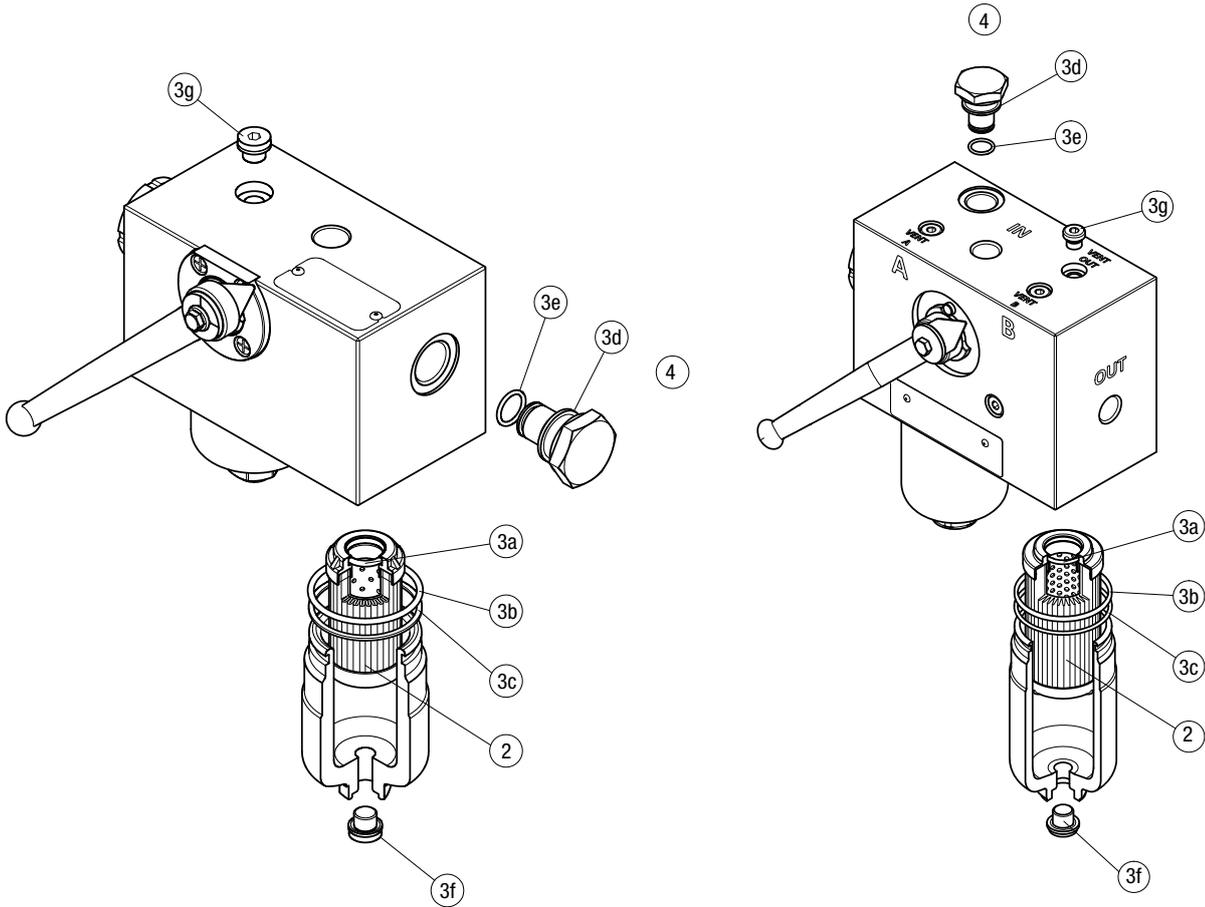


# FZD SPARE PARTS

Order number for spare parts

FZD 010

FZD 021 - FZD 051



Item:	Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		
FZD 010	See order table	NBR	FPM	NBR	FPM	
		02050613	02050655			
<b>FZD 021</b>		02050796	02050797	X2H	X2V	
<b>FZD 051</b>		02050800	02050801			

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