

# FZH series

Maximum working pressure up to 70 Mpa (700 bar) - Flow rate up to 80 l/min



## INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



FZH012



FZH040

Please scan or click the QR codes to get updated electronic version of the related document.



*For all the QR codes: Scan or click me!*

## Description

## Technical data

### Stainless steel high pressure filters

#### In-line

**Maximum working pressure up to 70 Mpa (700 bar)**

**Flow rate up to 80 l/min**

FZH is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.

They are directly connected to the lines of the system through the hydraulic fittings.

#### Available features:

- 1/2" female threaded connections, for a maximum flow rate of 80 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
- 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
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

#### Filter housing materials

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

#### Pressure

- Test pressure: 105 MPa (1050 bar)
- Min. Burst pressure: 210 MPa (2100 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 70 MPa (700 bar)

#### Bypass valve

Opening pressure 6 bar  $\pm$ 10%

#### Filter element features

Filter FZH	Filter element HP		
$\Delta p$ Element type			
Element media	Construction	$\Delta p$ Series	$\Delta p$
A - Microfiber	Standard	N	20 bar
	with external support	R	20 bar
	High $\Delta p$	H	210 bar
	High $\Delta p$ with external support	S	210 bar
	High $\Delta p$ with stainless steel components	U	210 bar

*Please see ordering code tables to check element  $\Delta p$  series availability based on filter features.*

**Flow direction through the filter element:**  
From OUT to IN

Filter element components materials	$\Delta p$ Series		
	N - R	H - S	U
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

#### 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)

#### Temperature

From -50 °C to +120 °C

#### Note

FZH filters are provided for vertical mounting

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

Filter series	Weights [kg]				Volumes [dm <sup>3</sup> ]					
	Length	1	2	3	4	Length	1	2	3	4
<b>FZH 012</b>		2.1	2.2	2.7	3.3		0.10	0.12	0.15	0.20
<b>FZH 040</b>		-	4.5	5.1	5.6		-	0.19	0.26	0.34

Flow rates [l/min]

Filter series	Length	Filter element design - N Series					Filter element design - H-U Series				
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
<b>FZH 012</b>	<b>1</b>	4	6	8	9	11	3	5	6	7	9
	<b>2</b>	7	9	17	20	26	5	7	14	17	23
	<b>3</b>	11	14	25	27	32	11	14	24	27	32
	<b>4</b>	17	20	29	31	34	13	16	26	29	33

Filter series	Length	Filter element design - R Series					Filter element design - S-U Series				
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
<b>FZH 040</b>	<b>2</b>	19	25	43	50	59	19	23	41	45	55
	<b>3</b>	34	37	53	62	74	31	34	48	52	66
	<b>4</b>	42	46	63	72	81	38	41	55	71	78

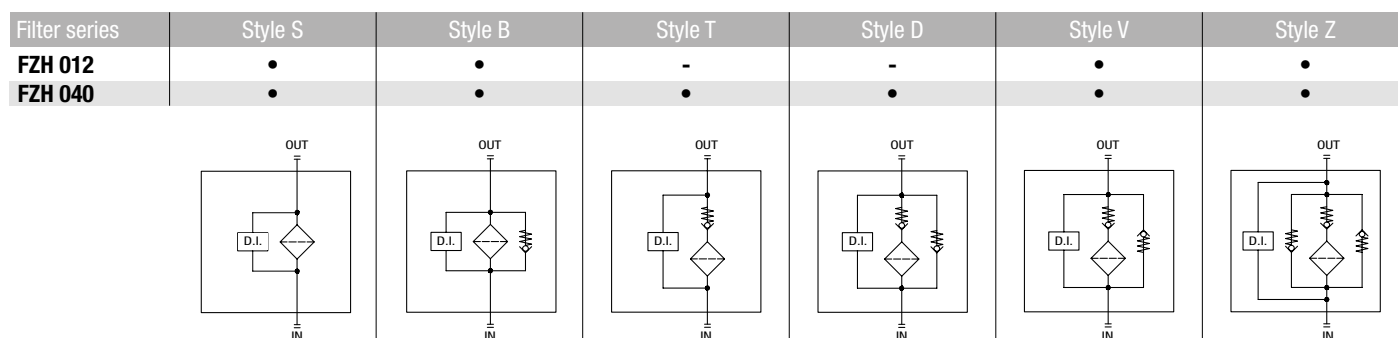
**Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop  $\Delta p = 1.5$  bar.**

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).

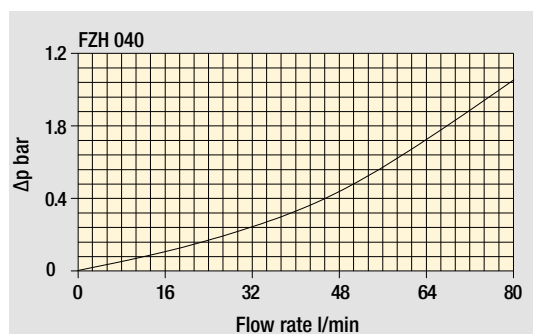
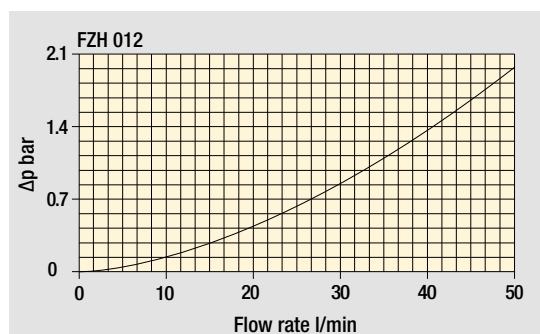
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

## Hydraulic diagram



## 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

Configuration example: **FZH012** **2** **B** **F** **B** **2** **A03** **U** **P01**

**Filter Series and size**  
**FZH012**

**Filter length**  
**1** | **2** | **3** | **4** |

**Valves**  
**S** Without bypass  
**B** With bypass 6 bar  
**V** With reverse flow, without bypass  
**Z** With reverse flow, with bypass 6 bar

**Seals**  
**A** NBR  
**V** FPM  
**F** MFQ

**Connections**  
**A** G 1/4"  
**B** 1/4" NPT  
**C** SAE 5 - 1/2" - 20 UNF  
**D** G 3/8"  
**E** 3/8" NPT  
**F** SAE 6 - 9/16" - 18 UNF

**Connection for differential pressure indicator**  
**1** Without connection  
**2** With connection

**Filtration rating (filter media)**

Rating	Media	µm
A03	Inorganic microfiber	3
A06	Inorganic microfiber	6
A10	Inorganic microfiber	10
A16	Inorganic microfiber	16
A25	Inorganic microfiber	25

Element Δp	Valves			
	S	B	V	Z
N 20 bar	-	•	-	•
H 210 bar	•	-	•	-
U 210 bar, stainless steel filter element	•	•	•	•

Execution	
<b>P01</b>	MP Filtri standard
<b>Pxx</b>	Customized

### FILTER ELEMENT

Configuration example: **HP011** **2** **A03** **F** **U** **P01**

**Element series and size**  
**HP011**

**Element length**  
**1** | **2** | **3** | **4** |

**Filtration rating (filter media)**

Rating	Media	µm
A03	Inorganic microfiber	3
A06	Inorganic microfiber	6
A10	Inorganic microfiber	10
A16	Inorganic microfiber	16
A25	Inorganic microfiber	25

**Seals**  
**A** NBR  
**V** FPM  
**F** MFQ

Element Δp	Valves			
	S	B	V	Z
N 20 bar	-	•	-	•
H 210 bar	•	-	•	-
U 210 bar, stainless steel filter element	•	•	•	•

Execution	
<b>P01</b>	MP Filtri standard
<b>Pxx</b>	Customized

### CLOGGING INDICATORS

See page 787

**DEZ** Electrical differential pressure indicator

**DVZ** Visual differential pressure indicator

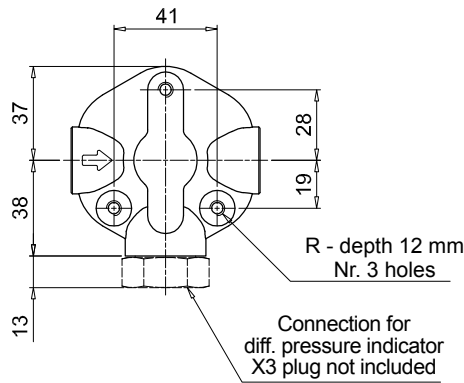
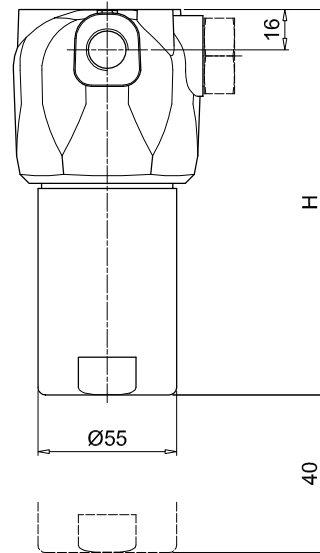
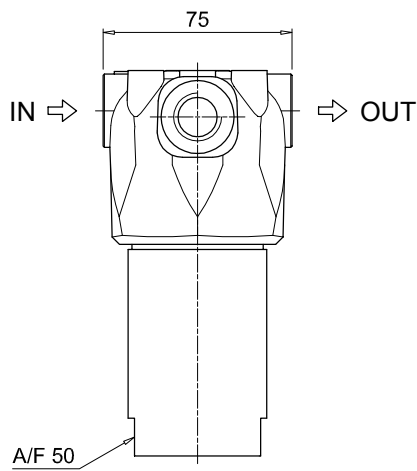
**DLZ** Electrical/visual differential pressure indicator

### PLUGS

See page 807

**X3** Stainless steel plug (not included)

FZH012	
Filter length	H [mm]
<b>1</b>	93
<b>2</b>	104
<b>3</b>	154
<b>4</b>	204
Connections	R
<b>A</b>	M6
<b>B - C</b>	1/4" UNC
<b>D</b>	M6
<b>E - F</b>	1/4" UNC



## Designation & Ordering code

### COMPLETE FILTER

Configuration example: **FZH040** **2** **T** **A** **A** **2** **A03** **S** **P01**

**Filter Series and size**  
**FZH040**

**Filter length**  
**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  
**V** With reverse flow, without bypass  
**Z** With reverse flow, with bypass 6 bar

**Seals**  
**A** NBR      **F** MFQ  
**V** FPM

**Connections**  
**A** G 1/2"  
**B** 1/2" NPT  
**C** SAE 8 - 3/4" - 16 UNF

**Connection for differential pressure indicator**  
**1** Without connection  
**2** With connection

**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	S	B	T	D	V	Z
<b>R</b> 20 bar	-	•	-	•	-	•
<b>S</b> 210 bar	•	-	•	-	•	-
<b>U</b> 210 bar, stainless steel filter element	•	•	•	•	•	•

**Valves**

Valves	S	B	T	D	V	Z
<b>P01</b> MP Filtri standard	-	•	-	•	-	•
<b>Pxx</b> Customized	•	-	•	-	•	-

### FILTER ELEMENT

Configuration example: **HP039** **2** **A03** **A** **S** **P01**

**Element series and size**  
**HP039**

**Element length**  
**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**  
**A** NBR      **F** MFQ  
**V** FPM

Element Δp	S	B	T	D	V	Z
<b>R</b> 20 bar	-	•	-	•	-	•
<b>S</b> 210 bar	•	-	•	-	•	-
<b>U</b> 210 bar, stainless steel filter element	•	•	•	•	•	•

**Valves**

Valves	S	B	T	D	V	Z
<b>P01</b> MP Filtri standard	-	•	-	•	-	•
<b>Pxx</b> Customized	•	-	•	-	•	-

### CLOGGING INDICATORS

See page 787

**DEZ** Electrical differential pressure indicator

**DLZ** Electrical/visual differential pressure indicator

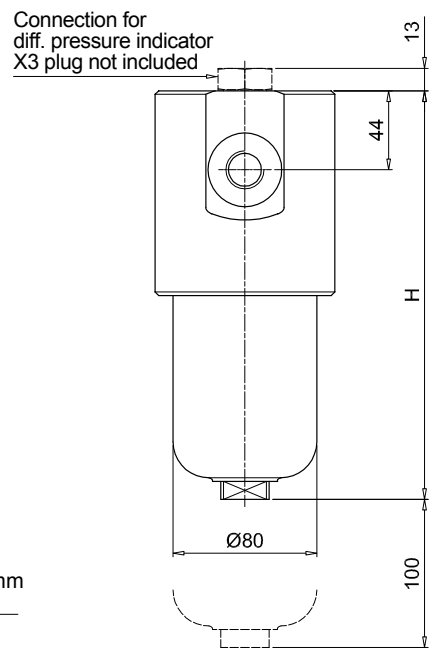
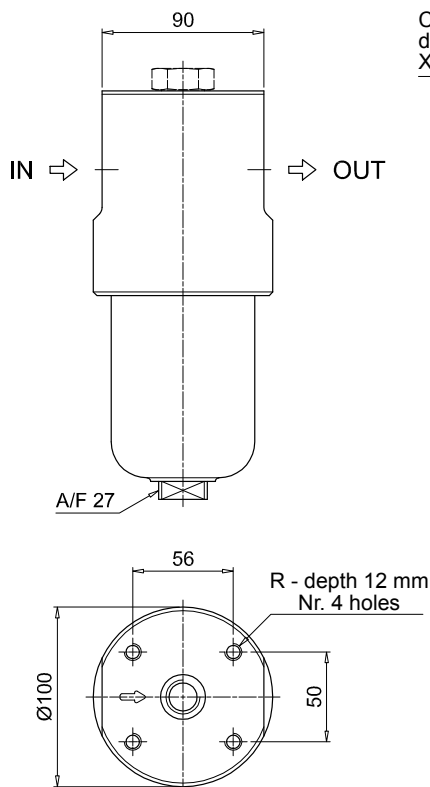
**DVZ** Visual differential pressure indicator

### PLUGS

See page 807

**X3** Stainless steel plug (not included)

Valves S - B - T - D



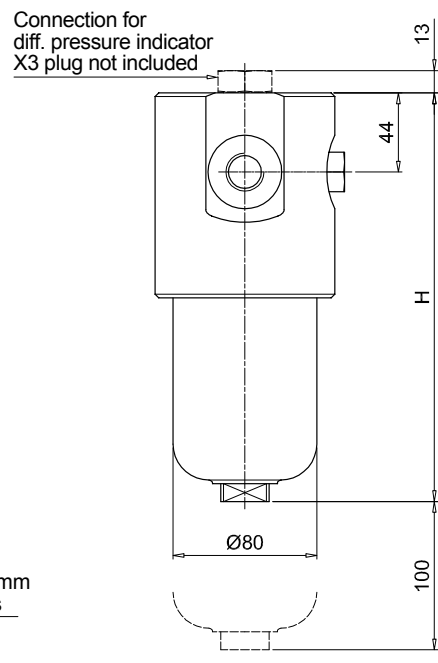
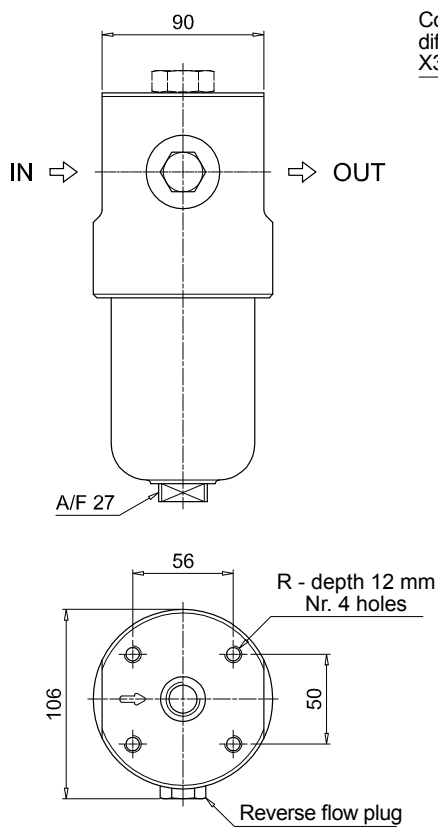
Recommended clearance space for maintenance

FZH040	
Filter length	H [mm]
2	204
3	247
4	291

Connections	R
A	M10
B	3/8" UNC
C	3/8" UNC

Valves V - Z



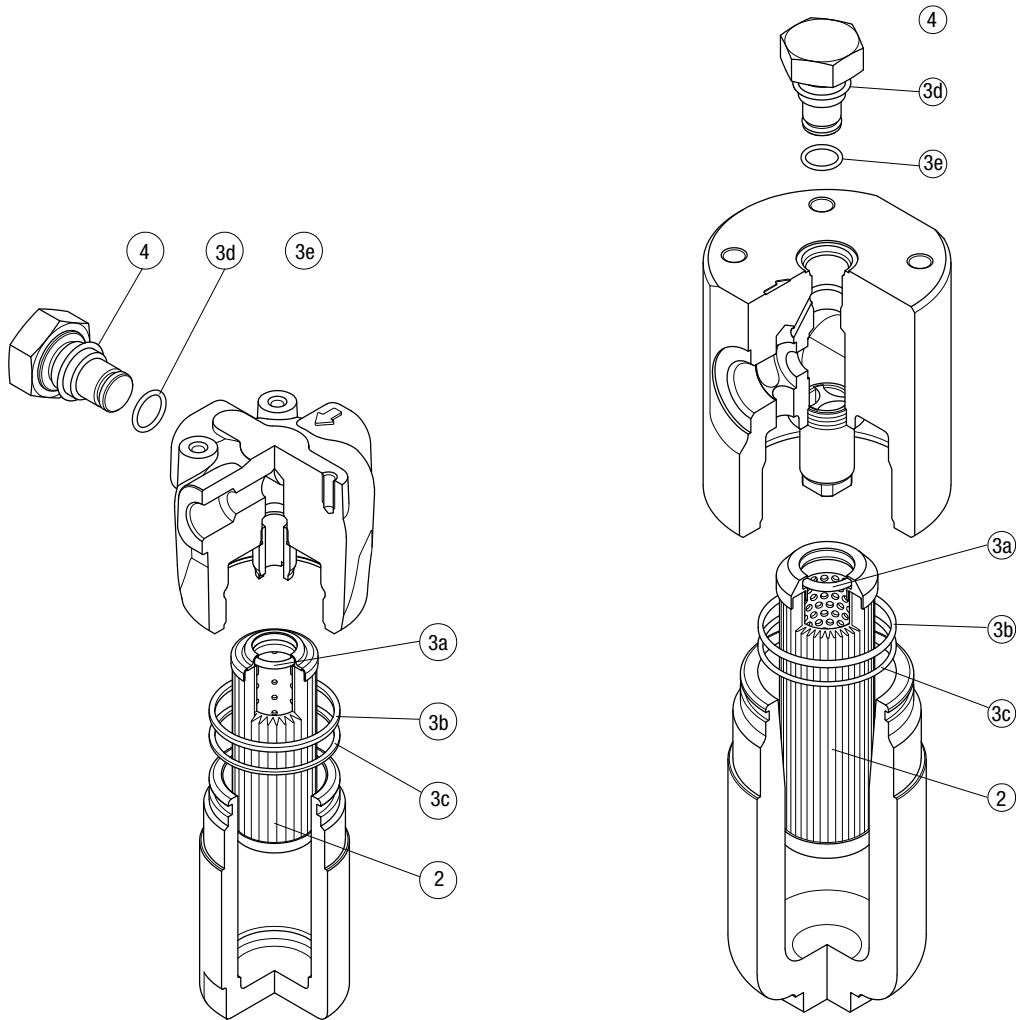
Recommended clearance space for maintenance

# FZH SPARE PARTS

Order number for spare parts

FZH 012

FZH 040



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
FZH 012	See order table	NBR	FPM	NBR	FPM
FZH 040	See order table	02050856	02050857	X2H	X2V
		02050860	02050861		