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

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FZH012 FZH040

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FZH GENERAL INFORMATION

Description

Stainless steel high pressure filters

In-line
Maximum working pressure up to 80 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

Technical data

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

FZH filters are provided for vertical mounting

Δp element type

Fluid flow through the filter element from OUT to IN

Microfibre filter elements - series N-R: 20 bar.
Element series "N - R":
- End cap: Polyamide
- 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 [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZH 012		2.1	2.2	2.7	3.3		0.10	0.12	0.15	0.20
FZH 040		-	4.5	5.1	5.6		-	0.19	0.26	0.34

Flow rates [l/min]

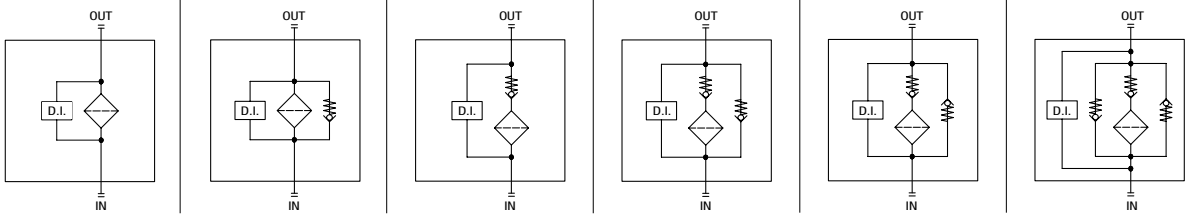
		Filter element design - N Series					Filter element design - H-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZH 012	1	4	6	8	9	11	3	5	6	7	9
	2	7	9	17	20	26	5	7	14	17	23
	3	11	14	25	27	32	11	14	24	27	32
	4	17	20	29	31	34	13	16	26	29	33

		Filter element design - R Series					Filter element design - S-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZH 040	2	19	25	43	50	59	19	23	41	45	55
	3	34	37	53	62	74	31	34	48	52	66
	4	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 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.

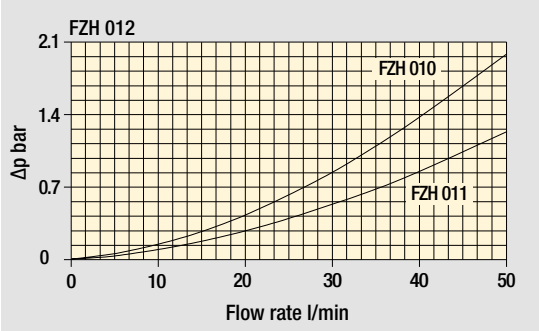
Hydraulic symbols

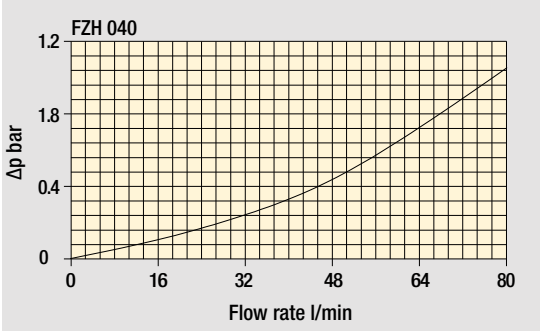
Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FZH 012	•	•	-	-	•	•
FZH 040	•	•	•	•	•	•



Pressure drop

Filter housings Δp 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.

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)
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

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

Execution
P01	MP Filtri standard
Pxx	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)
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

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
P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 728

DEZ	Electrical differential pressure indicator
DLZ	Electrical/visual differential pressure indicator
DVZ	Visual differential pressure indicator

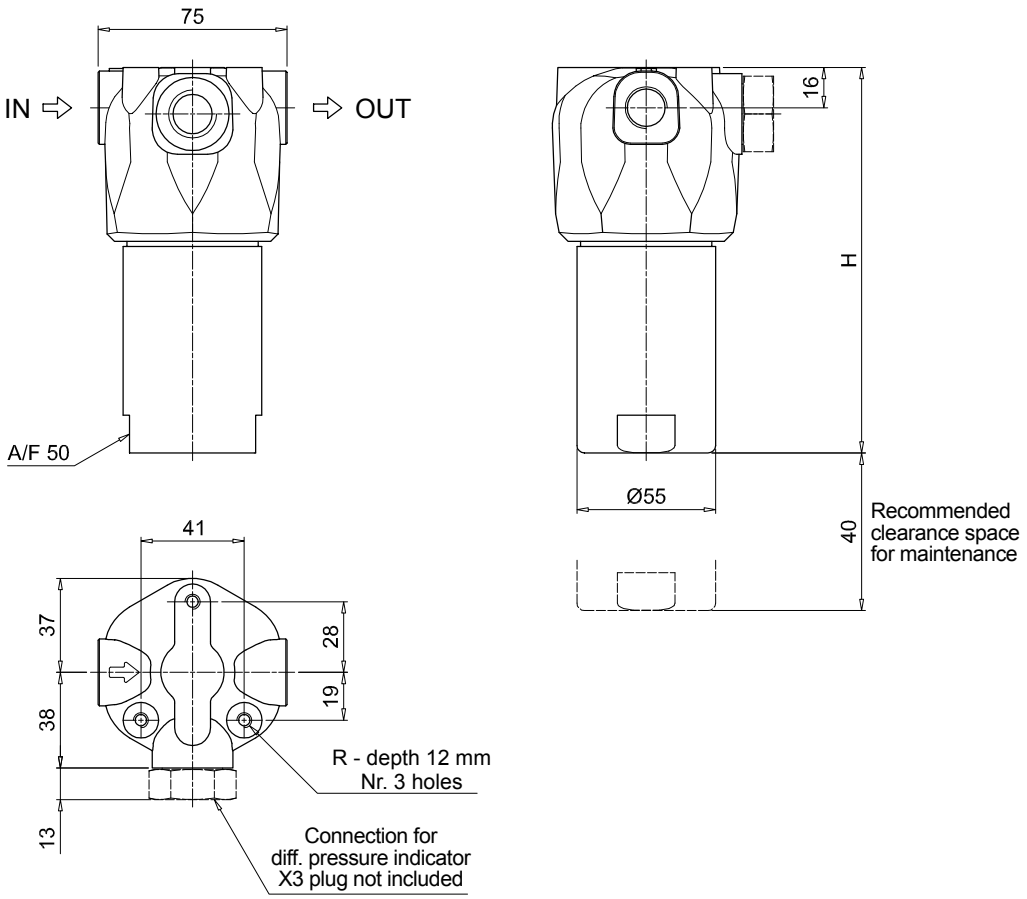
PLUGS

See page 747

X3	Stainless steel plug (not included)

FZH012	
Filter length	**H [mm]**
1	93
2	104
3	154
4	204

Connections	**R**
A	M6
B - C	1/4" UNC
D	M6
E - F	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)
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

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

Execution
P01 MP Filtri standard
Pxx 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)
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

Seals
A NBR
F MFQ
V FPM

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

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 728

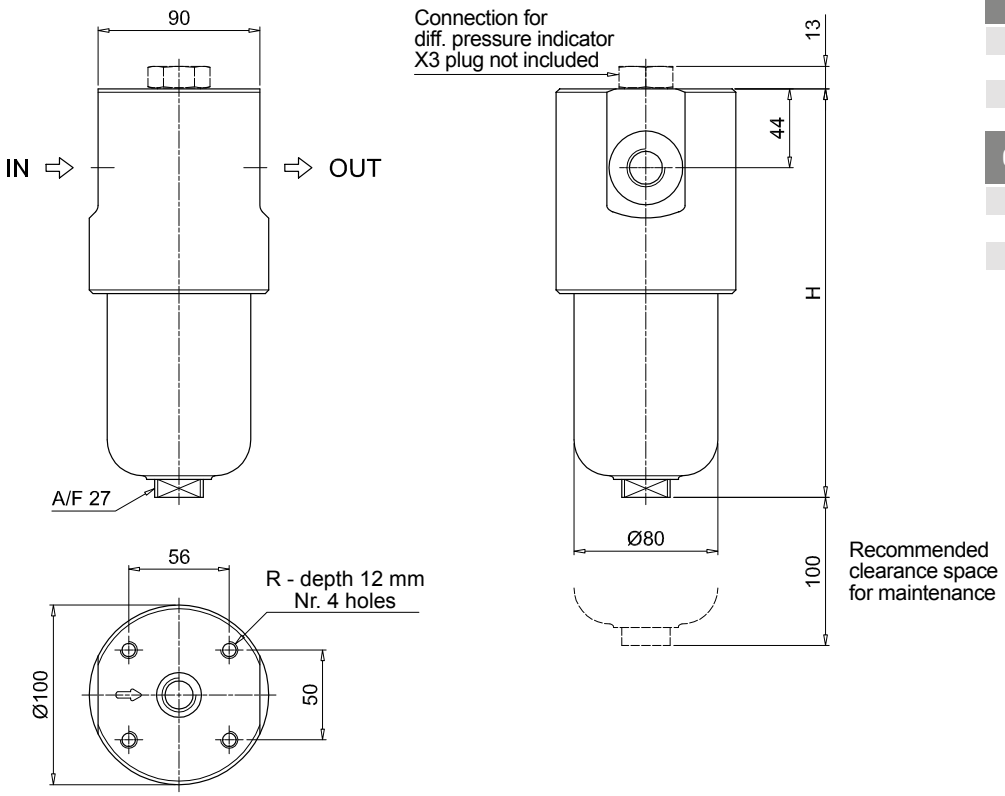
DEZ Electrical differential pressure indicator
DLZ Electrical/visual differential pressure indicator
DVZ Visual differential pressure indicator

PLUGS

See page 747

X3 Stainless steel plug (not included)

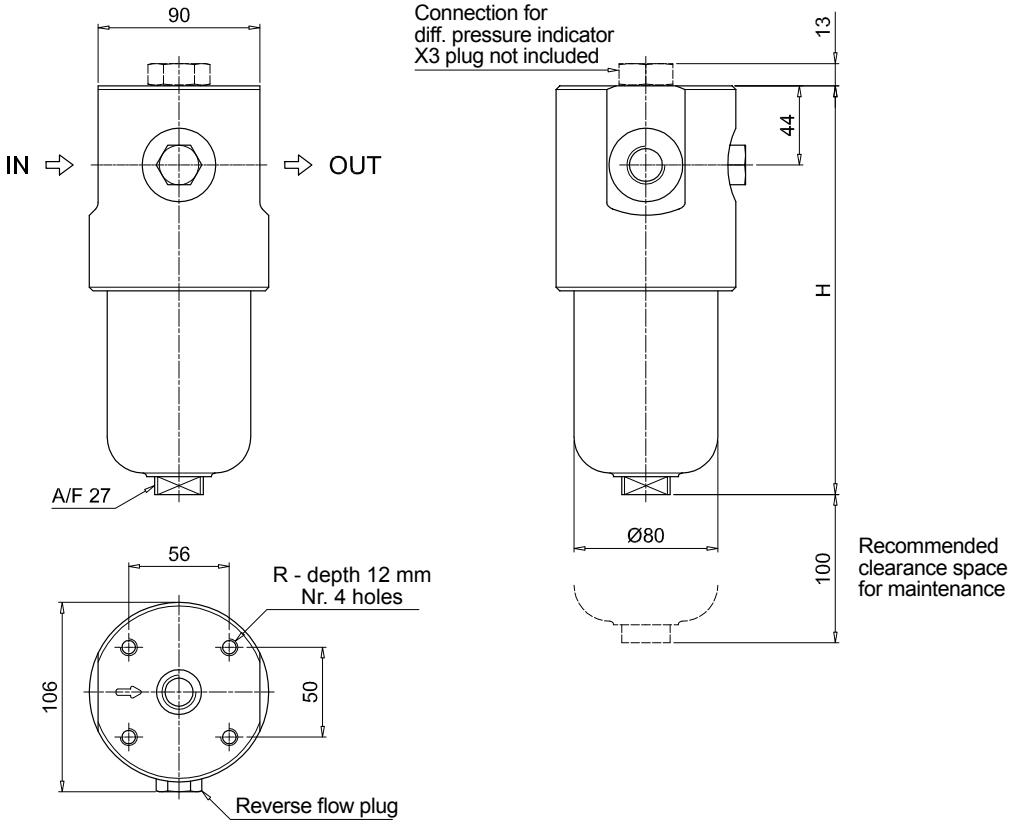
Valves S - B - T - D



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

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

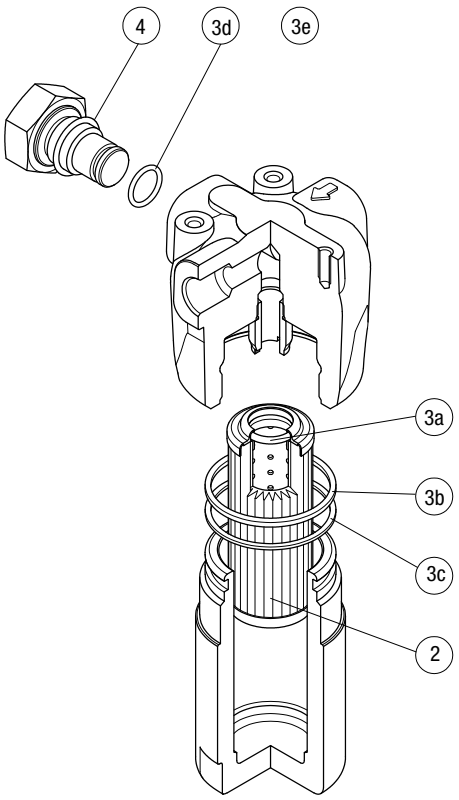
Valves V - Z



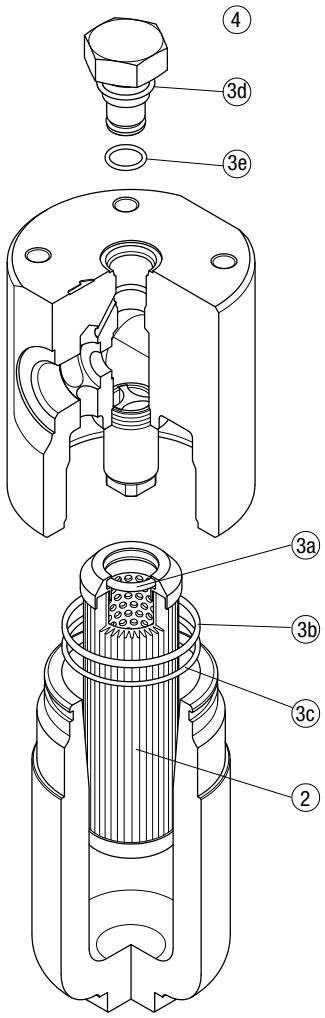
FZH SPARE PARTS

Order number for spare parts

FZH 012



FZH 040



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FZH 012	See order table	02050856	02050857	X2H	X2V
FZH 040		02050860	02050861		

STAINLESS STEEL HIGH PRESSURE FILTERS

Designation & Ordering code

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	Z	50	H	A	50	P01
Configuration example 2:	DL	X	70	V	A	52	P01

Series

DE	Electrical differential pressure indicator
DL	Electrical / Visual differential pressure indicator
DV	Visual differential pressure indicator

Type	DE	DL	DV
X Stainless steel standard type 420 bar	•	•	•
Y Stainless steel optional type 420 bar	-	-	•
Z Stainless steel 700 bar (only for FZH)	•	•	•

Pressure setting	DEX	DEZ	DL	DV
50 5.0 bar	•	•	•	•
70 7.0 bar	•	•	•	•
95 9.5 bar	•	•	•	•

Seals	DEX	DEZ	DL	DV
H HNBR	•	•	•	•
V FPM	-	-	•	•
F MFQ	•	•	-	-

Thermostat	DEX	DEZ	DL	DV
A Without thermostat	•	•	•	-

Electrical connections	DEX	DEZ	DL
50 Connection EN 175301-803	•	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	•
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	•

Option

P01	MP Filtri standard
Pxx	Customized

PLUGS

Configuration example	X2	H

Series

X2	Stainless Steel plug 420 bar
X3	Stainless Steel plug 700 bar (only for FZH)

Seals

H	HNBR
V	FPM
F	MFQ