# FZB series

**Maximum working pressure up to 32 Mpa (320 bar) - Flow rate up to 70 l/min**

INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

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# FZB GENERAL INFORMATION

## Description

Stainless steel high pressure filters

**Manifold**
**Maximum working pressure up to 32 Mpa (320 bar)**
**Flow rate up to 70 l/min**

FZB 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 side of the manifold, through the proper flanged interface.

### Available features:

- Manifold connections up to Ø16 mm, for a maximum flow rate of 70 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 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

FZB 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: Polyamide
- Core tube: Tinned steel
- External/Internal support: Wire mesh Epox painted
- Media/Support/Pre-filter: Microfibre/Syntetic

Microfibre filter elements - series S: 210 bar.
Element series "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 |
| **FZB 039** | | - | 4.6 | 5.2 | 5.7 | | - | 0.19 | 0.26 | 0.34 |

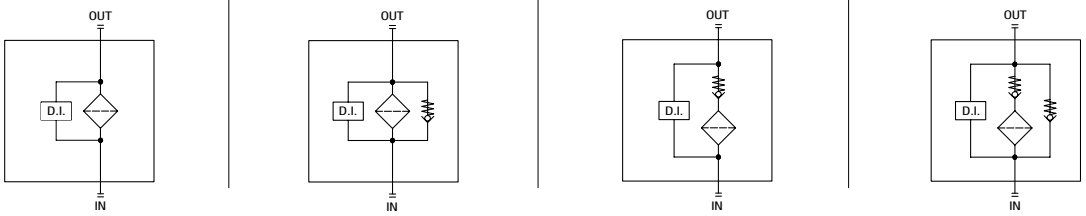
## Flow rates [l/min]

| | | Filter element design - R Series | | | | | Filter element design - S Series | | | | | Filter element design - U Series | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Filter series | Length | A03 | A06 | A10 | A16 | A25 | A03 | A06 | A10 | A16 | A25 | A03 | A06 | A10 | A16 | A25 |
| | **2** | 18 | 23 | 39 | 44 | 52 | 18 | 22 | 37 | 40 | 48 | 18 | 22 | 37 | 40 | 48 |
| **FZB 039** | **3** | 31 | 33 | 47 | 54 | 65 | 28 | 31 | 43 | 46 | 84 | 28 | 31 | 43 | 46 | 84 |
| | **4** | 38 | 41 | 56 | 63 | 71 | 34 | 36 | 48 | 62 | 68 | 34 | 36 | 48 | 62 | 68 |

**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.

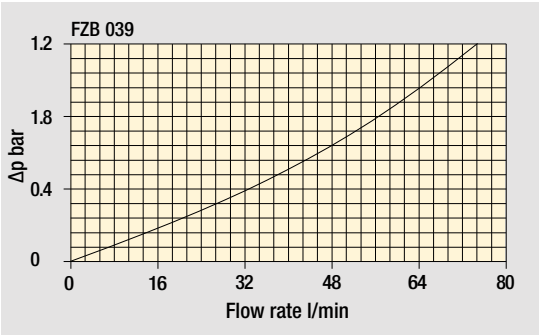
## Hydraulic symbols

| Filter series | Style S | Style B | Style T | Style D |
|---|---|---|---|---|
| **FZB 039** | • | • | • | • |




## 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: FZB039 | 2 | T | A | F | 2 | A06 | S | P01

**Series and size**
**FZB039**

**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

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

**Connections**
**F** Manifold

**Connections for differential pressure indicators**
**1** Without connection
**2** With connection on the top

**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 |
|---|---|---|---|---|---|
| **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 | A06 | 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
**V** FPM
**F** MFQ

**Element Δp**
**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

**DEX** Electrical differential pressure indicator
**DLX** Electrical/visual differential pressure indicator
**DVX** Visual differential pressure indicator
**DVY** Visual differential pressure indicator

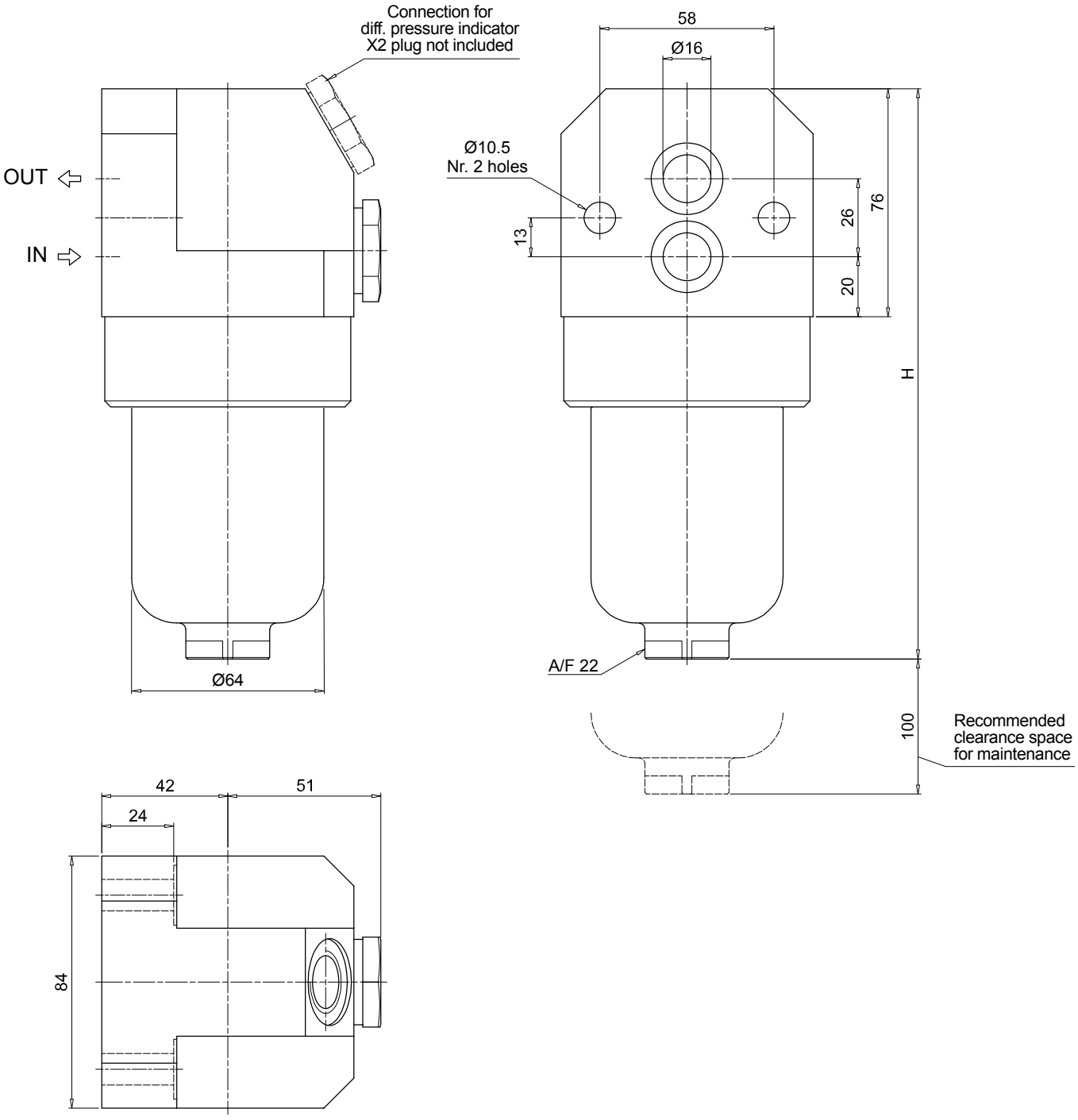
### PLUGS

See page 747

**X2** Stainless steel plug (not included)

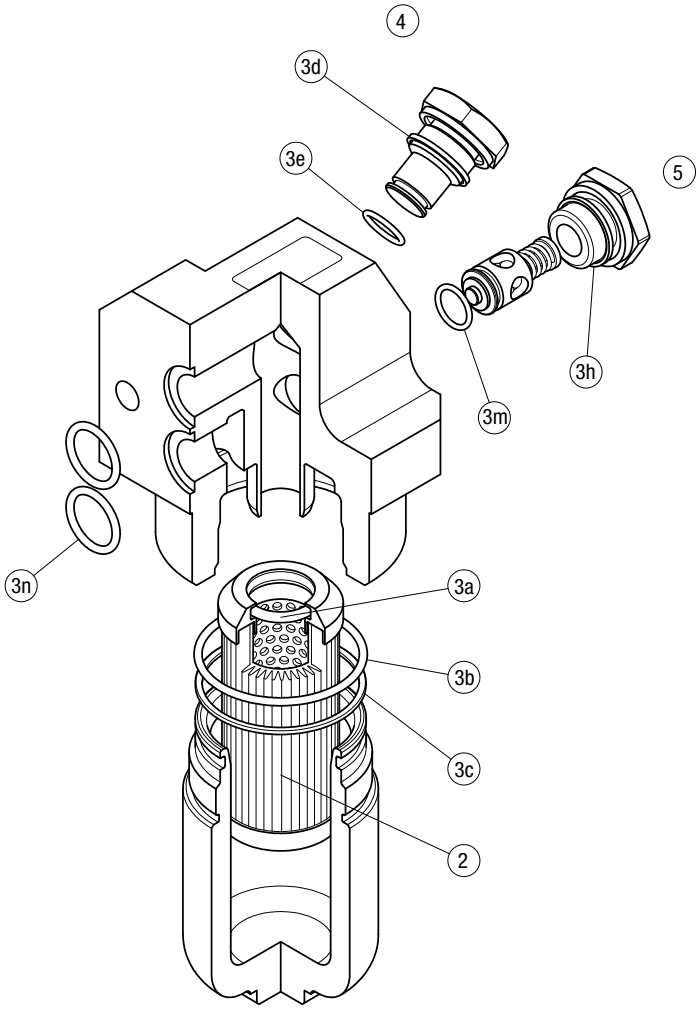
## Dimensions

| FZB039 | |
|---|---|
| **Filter length** | **H [mm]** |
| **2** | 190 |
| **3** | 233 |
| **4** | 277 |



Order number for spare parts

**FZB 039**




| Item: | Q.ty: 1 pc. 2 | Q.ty: 1 pc. 3 (3a ÷ 3n) | | Q.ty: 1 pc. 4 | | Q.ty: 1 pc. 5 | |
|---|---|---|---|---|---|---|---|
| **Filter series** | **Filter element** | **Seal Kit code number NBR** | **FPM** | **Indicator connection plug NBR** | **FPM** | **Bypass assembly / plug NBR** | **FPM** |
| **FZB 039** | See order table | 02050647 | 02050648 | X2H | X2V | 02001286 | 02001295 |

# 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 |