

FZD series

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



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



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FZD010



FZD021



FZD051

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 60 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 ±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: Polyamide
- 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 [dm³]

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

FILTER ASSEMBLY SIZING 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 |
| FZD 010 | 2 | 4 | 5 | 7 | 8 | 11 | 4 | 5 | 7 | 8 | 11 |
| | 3 | 5 | 6 | 11 | 12 | 16 | 5 | 6 | 11 | 12 | 16 |
| FZD 021 | 3 | 9 | 11 | 16 | 18 | 20 | 9 | 11 | 16 | 18 | 20 |
| | 4 | 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 |
| FZD 051 | 2 | 39 | 41 | 51 | 54 | 59 | 35 | 37 | 48 | 51 | 58 | 35 | 37 | 48 | 51 | 58 |
| | 3 | 45 | 46 | 54 | 56 | 61 | 41 | 43 | 52 | 54 | 60 | 41 | 43 | 52 | 54 | 60 |
| | 4 | 50 | 52 | 58 | 58 | 62 | 47 | 49 | 56 | 56 | 61 | 47 | 49 | 56 | 56 | 61 |
| | 5 | 56 | 57 | 61 | 62 | 63 | 53 | 53 | 57 | 59 | 63 | 53 | 53 | 57 | 59 | 63 |
| | 6 | 62 | 63 | 67 | 68 | 71 | 59 | 60 | 64 | 66 | 71 | 59 | 60 | 64 | 66 | 71 |

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 mm²/s (cSt) and a density of 0.86 kg/dm³.

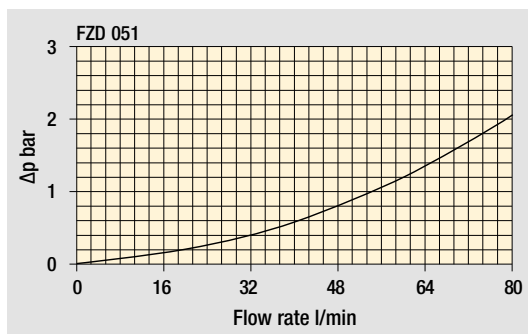
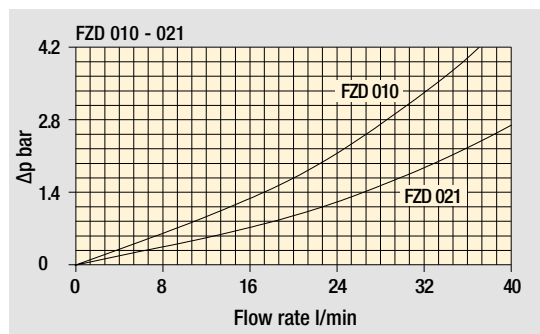
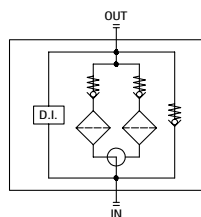
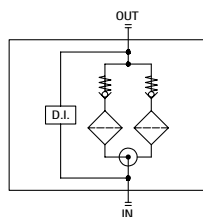
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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 |
|----------------|---------|---------|
| FZD 010 | • | - |
| FZD 021 | • | - |
| FZD 051 | • | • |



Pressure drop Filter housings Δp pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

| Series and size | | Configuration example: FZD021 4 S A G1 A06 H P01 | | | | | | | | | | | |
|-----------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------|--|--|--|--|--|--|--------------------------------------------------|--|-------------------------------|--|
| FZD010 | FZD021 | | | | | | | | | | | | |
| Length | | FZD010 | FZD021 | | | | | | | | | | |
| 2 | | • | • | | | | | | | | | | |
| 3 | | - | • | | | | | | | | | | |
| 4 | | - | • | | | | | | | | | | |
| Bypass valve | | | | | | | | | | | | | |
| S | Without bypass | | | | | | | | | | | | |
| Seals | | | | | | | | | | | | | |
| A | NBR | | | | | | | | | | | | |
| V | FPM | | | | | | | | | | | | |
| Connections | | FZD010 | FZD021 | | | | | | | | | | |
| G1 | | G 3/8" | G 1/2" | | | | | | | | | | |
| G2 | | 3/8" NPT | 1/2" NPT | | | | | | | | | | |
| G3 | | - | SAE 8 - 3/4" - 16 UNF | | | | | | | | | | |
| 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 | | Execution | |
| | | | | | | | | | | H 210 bar | | P01 MP Filtri standard | |
| | | | | | | | | | | U 210 bar, stainless steel filter element | | Pxx Customized | |

FILTER ELEMENT

| Element series and size | | Configuration example: HP011 4 A06 A H P01 | | | | | | | | | | | | | |
|-----------------------------------------|----------------------|------------------------------------------------------------------------------------------------|-------|--|--|--|--|--|--|--------------|--|--------------------------------------------------|--|-------------------------------|--|
| HP010 | HP011 | | | | | | | | | | | | | | |
| Element length | | HP010 | HP011 | | | | | | | | | | | | |
| 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 | | Element Δp | | Execution | |
| | | | | | | | | | | A NBR | | H 210 bar | | P01 MP Filtri standard | |
| | | | | | | | | | | V FPM | | U 210 bar, stainless steel filter element | | Pxx Customized | |

CLOGGING INDICATORS

See page 718

DEX Electrical differential pressure indicator

DVX Visual differential pressure indicator

DLX Electrical/visual differential pressure indicator

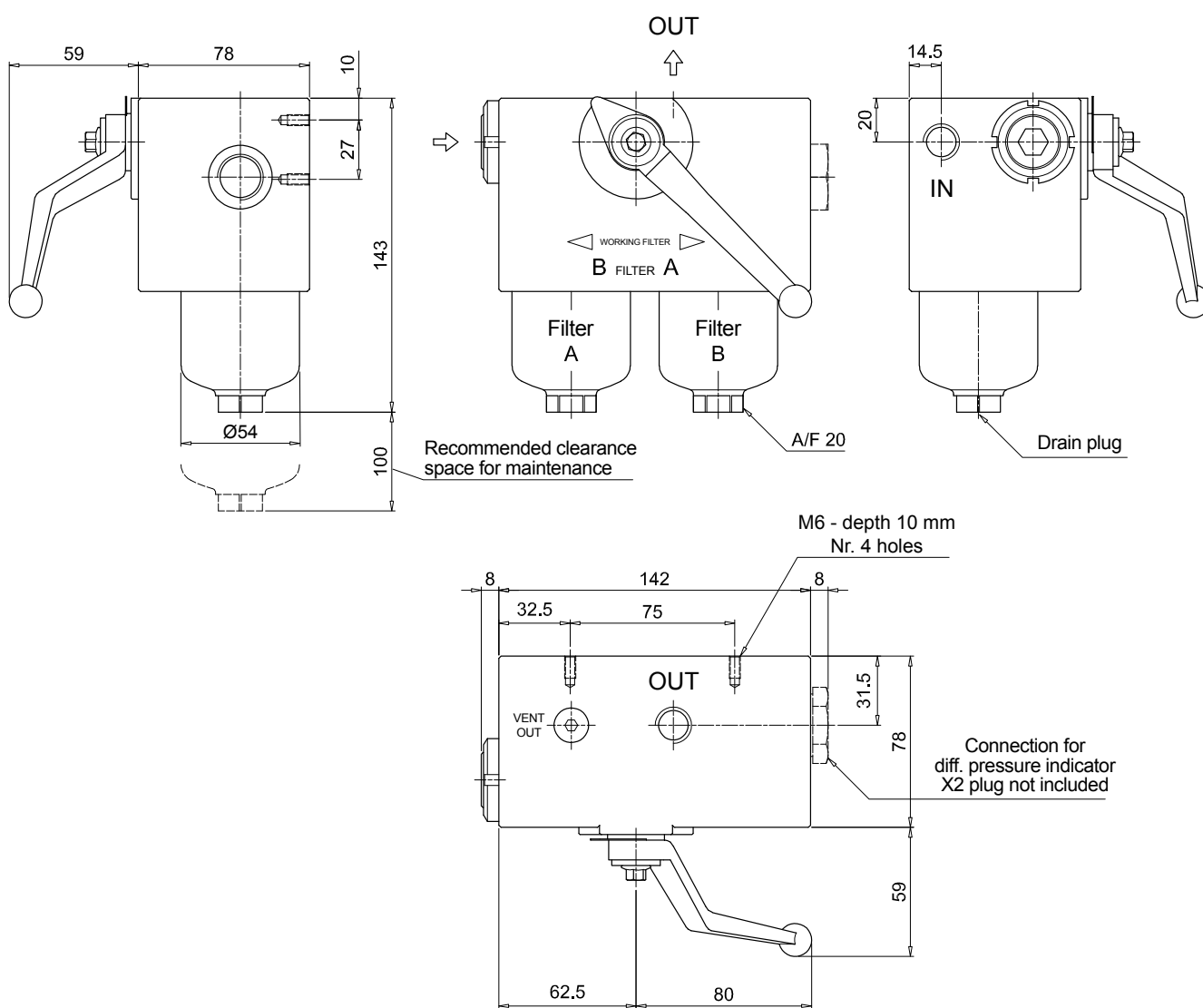
DVY Visual differential pressure indicator

PLUGS

See page 737

X2 Stainless steel plug (not included)

FZD010

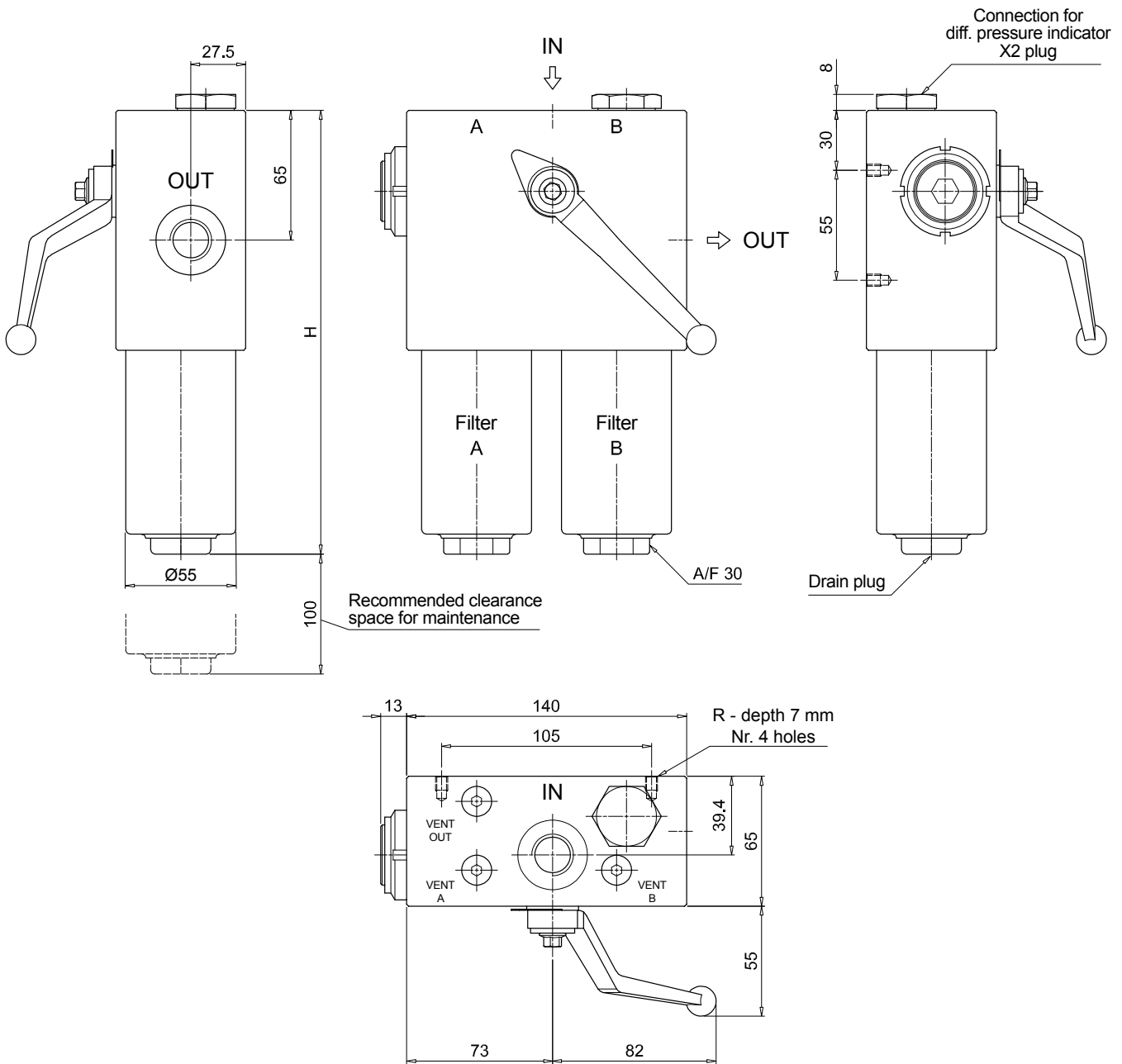


Dimensions

FZD021

| Filter length | H [mm] |
|---------------|--------|
| 2 | 172 |
| 3 | 222 |
| 4 | 272 |

| Connections | R |
|-------------|----------|
| G1 | M6 |
| G2 - G3 | 1/4" UNC |



Designation & Ordering code

COMPLETE FILTER

| Series and size FZD051 | Configuration example: FZD051 3 B A G3 A03 U P01 | | | | | | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------|--|-----------|---|---|-----------------|---|---|-------------------------------|------------------|---|---|-----------------------|--------------------------------------------------|---|---|--|
| Length 2 3 4 5 | | | | | | | | | | | | | | | | | | | |
| Bypass valve S Without bypass B With bypass 6 bar | | | | | | | | | | | | | | | | | | | |
| Seals A NBR V FPM | | | | | | | | | | | | | | | | | | | |
| Connections G1 G 3/4" G2 3/4" NPT G3 G 1/2" G4 1/2" NPT G5 SAE 8 - 3/4" - 16 UNF G6 SAE 12 - 1 1/16" - 12 UN | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th rowspan="2">Element Δp</th> <th colspan="2">Valves</th> <th rowspan="2">Execution</th> </tr> <tr> <th>S</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>R 20 bar</td> <td>-</td> <td>•</td> <td>P01 MP Filtri standard</td> </tr> <tr> <td>S 210 bar</td> <td>•</td> <td>-</td> <td>Pxx Customized</td> </tr> <tr> <td>U 210 bar, stainless steel filter element</td> <td>•</td> <td>•</td> <td></td> </tr> </tbody> </table> | Element Δp | Valves | | Execution | S | B | R 20 bar | - | • | P01 MP Filtri standard | S 210 bar | • | - | Pxx Customized | U 210 bar, stainless steel filter element | • | • | |
| Element Δp | Valves | | Execution | | | | | | | | | | | | | | | | |
| | S | B | | | | | | | | | | | | | | | | | |
| R 20 bar | - | • | P01 MP Filtri standard | | | | | | | | | | | | | | | | |
| S 210 bar | • | - | Pxx Customized | | | | | | | | | | | | | | | | |
| U 210 bar, stainless steel filter element | • | • | | | | | | | | | | | | | | | | | |

FILTER ELEMENT

| Element series and size HP050 | Configuration example: HP050 3 A03 A U P01 | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------|-------------------------------|--------------|-----------------|-------------------------------|--------------|------------------|-----------------------|--|--------------------------------------------------|--|
| Element length 2 3 4 5 | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | |
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| Seals | Element Δp | | | | Execution | | | | | | | | |
| | | A NBR | R 20 bar | P01 MP Filtri standard | | | | | | | | | |
| V FPM | S 210 bar | Pxx Customized | | | | | | | | | | | |
| | U 210 bar, stainless steel filter element | | | | | | | | | | | | |

CLOGGING INDICATORS

See page 718

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator

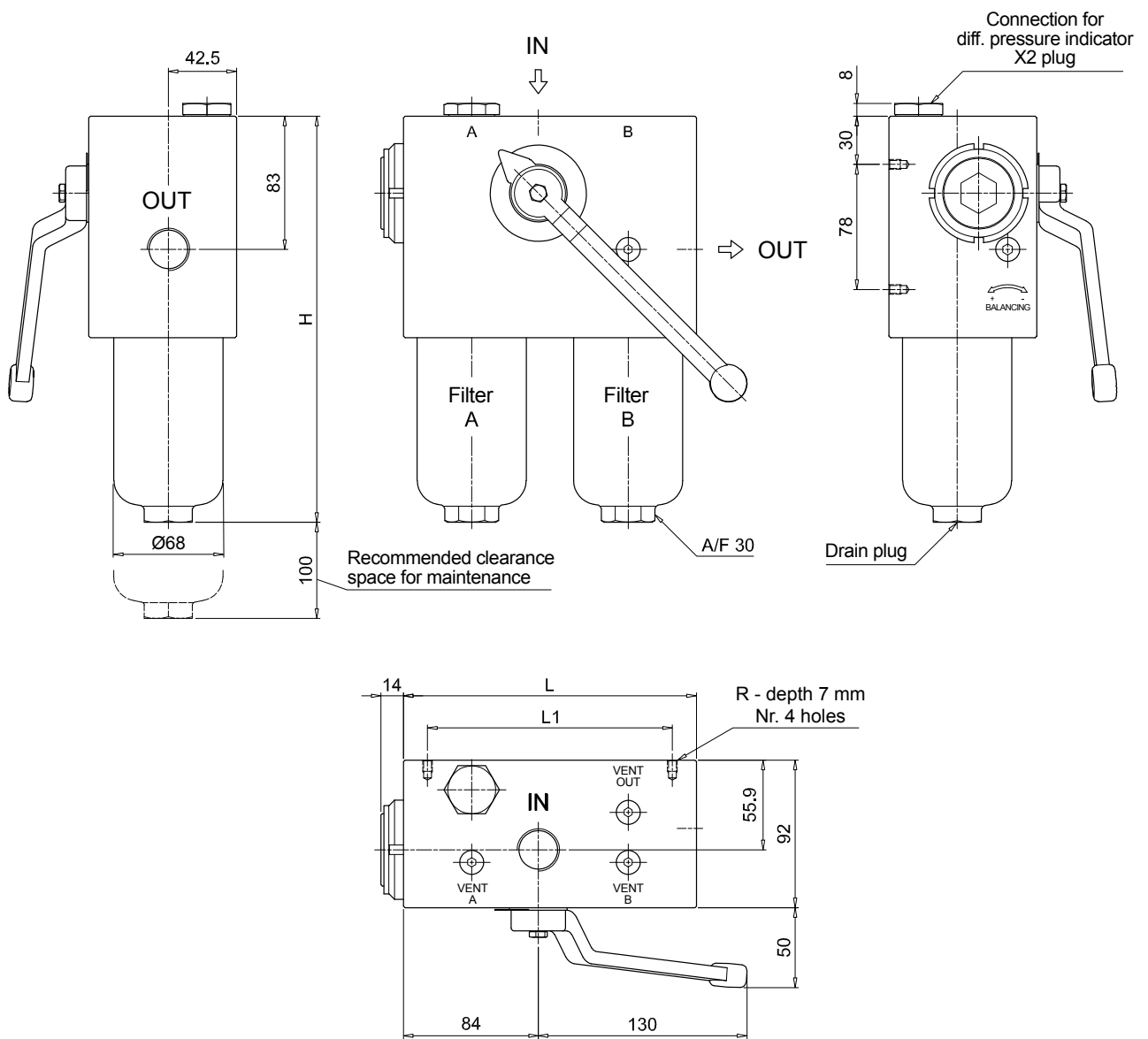
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

See page 737

X2 Stainless steel plug (not included)

| 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] |
| S | 168 | 138 |
| B | 182.5 | 152.5 |

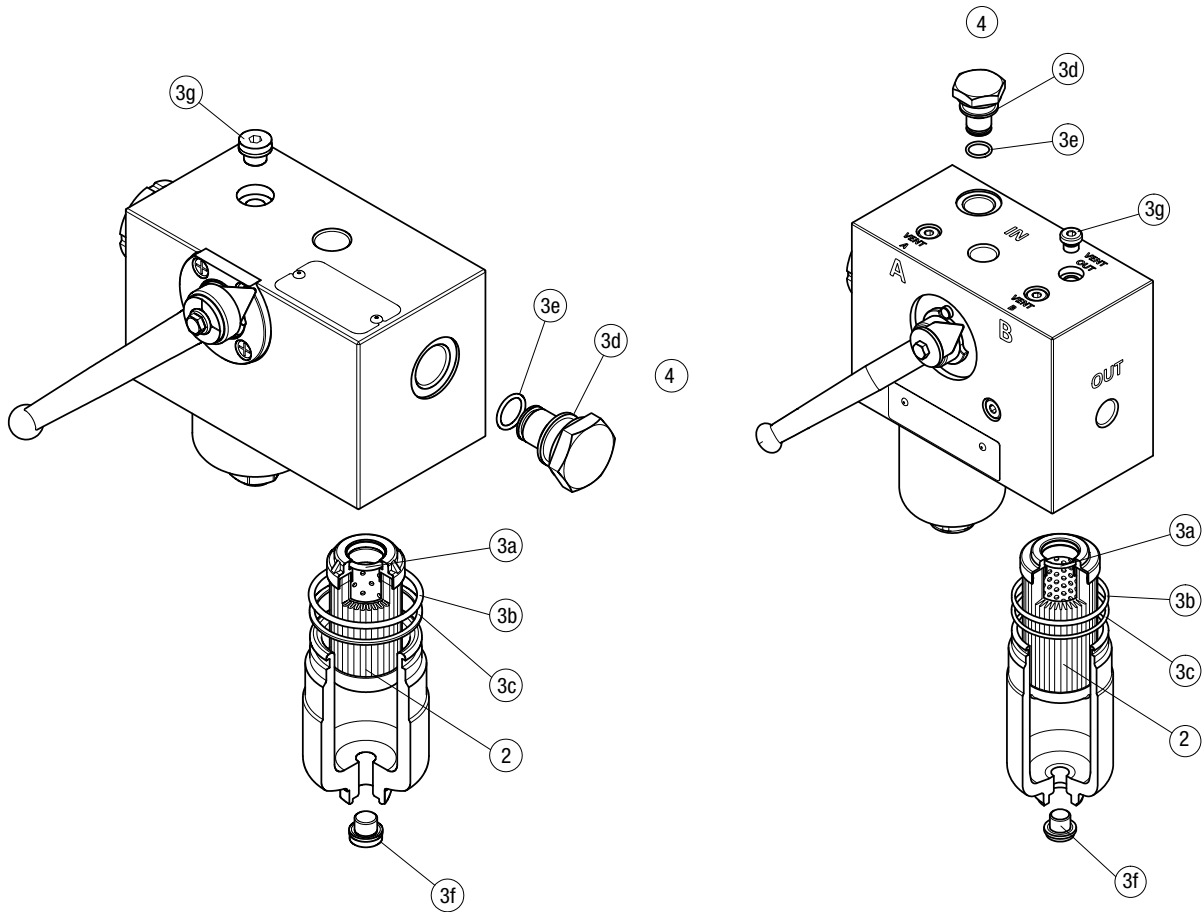


FZD SPARE PARTS

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 | | |
| FZD 021 | | 02050796 | 02050797 | X2H | X2V |
| FZD 051 | | 02050800 | 02050801 | | |

