FHB series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 485 l/min
FHB **General Information**

**Description**

**High Pressure filters**

**Manifold**

Maximum working pressure up to 32 MPa (320 bar)
Flow rate up to 485 l/min

FHB is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the side of the manifold, through the proper flanged interface.

**Available features:**
- Manifold connections up to Ø30 mm, for a maximum flow rate of 485 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
- Check valve, to protect the system against reverse flow
- 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
- High collapse filter element with external support “S”, for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

**Common applications:**
Delivery lines, in any high pressure industrial equipment or mobile machines

**Technical data**

**Filter housing materials**
- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Steel
- Check valve: Steel

**Pressure**
- Working pressure: 32 MPa (320 bar)
- Test pressure: 48 MPa (480 bar)
- Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

**Bypass valve**
- Opening pressure 600 kPa (6 bar) ±10%
- Other opening pressures on request.

**Δp element type**
- Microfibre filter elements - series N: 20 bar
- Microfibre filter elements - series H: 210 bar
  (not available for FHB050)
- Microfibre filter elements - series S: 210 bar (only for FHB050)
- Wire mesh filter elements - series N: 20 bar
- Fluid flow through the filter element from OUT to IN

**Seals**
- Standard NBR series A
- Optional FPM series V

**Temperature**

From -25 °C to +110 °C

**Connections**
Manifold mounting

**Note**
FHB filters are provided for vertical mounting

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**Weights [kg] and volumes [dm³]**

<table>
<thead>
<tr>
<th>Filter series</th>
<th>Weights [kg]</th>
<th>Volumes [dm³]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length 1</td>
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<tr>
<td>FHB 050</td>
<td>2.61</td>
<td>2.98</td>
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<td>FHB 065</td>
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<td>3.69</td>
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<td>FHB 135</td>
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<tr>
<td>FHB 320</td>
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**High Pressure filters**
### Filter Assembly Sizing

#### Flow rates [l/min]

<table>
<thead>
<tr>
<th>Filter series</th>
<th>Length</th>
<th>FHB 050</th>
<th>FHB 065</th>
<th>FHB 135</th>
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<tbody>
<tr>
<td></td>
<td>A03</td>
<td>A06</td>
<td>A10</td>
<td>A16</td>
<td>A25</td>
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<td>1</td>
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<td>106</td>
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<td>5</td>
<td>102</td>
<td>104</td>
<td>119</td>
<td>122</td>
<td>127</td>
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</tbody>
</table>

Maximum flow rate for a complete 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.mpfiltr.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

- **Style S**
- **Style B**
- **Style T**
- **Style D**

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**General Information**

**Filter Assembly Sizing**

**Flow rates [l/min]**

<table>
<thead>
<tr>
<th>Filter series</th>
<th>Style S</th>
<th>Style B</th>
<th>Style T</th>
<th>Style D</th>
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</thead>
<tbody>
<tr>
<td>FHB 050</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>FHB 065</td>
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<td>FHB 135</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>FHB 320</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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Pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. \( \Delta p \) varies proportionally with density.
### Complete Filter

**Designation & Ordering code**

<table>
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<th>FHB065</th>
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<th>FHB320</th>
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<tr>
<td></td>
<td>4</td>
<td>-</td>
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</table>

**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

**Connections**
- F1: Manifold

**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
- M25: Wire mesh 25 µm

### Filter Element

**Designation & Ordering code**

<table>
<thead>
<tr>
<th>HP065</th>
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</table>

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- A25: Inorganic microfiber 25 µm
- M25: Wire mesh 25 µm

### Clogging Indicators

- **DEA**: Electrical differential indicator
- **DEM**: Electrical differential indicator
- **DLA**: Electrical / visual differential indicator
- **DLE**: Electrical / visual differential indicator
- **DTA**: Electrical differential indicator
- **DVA**: Visual differential indicator
- **DVM**: Visual differential indicator

### Plugs

- **T2**: Differential indicator plug (not included)

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High Pressure filters
Recommended clearance space for maintenance

Connection for differential indicator T2 plug not included

<table>
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<th>H [mm]</th>
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FHB FHB065 - FHB135 - FHB320

Dimensions

<table>
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Connection for differential indicator T2 plug not included

Recommended clearance space for maintenance

High Pressure filters
<table>
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<tr>
<th>Item:</th>
<th>Q. by 1 pc.</th>
<th>Q. by 1 pc.</th>
<th>Q. by 1 pc.</th>
<th>Q. by 1 pc.</th>
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**Order number for spare parts**

**FHB SPARE PARTS**

**High Pressure filters**