Suction and return line filters

Uni-Cardan®
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Suction and Return line Filters Series UCFR

Description

Filters series UCFR are suitable for applications on suction or return line of hydraulic circuits, installed semi-immersed in the oil tank. They are available with connection ports from 1/2” up to 1 1/4” and flow rate from 30 up to 180 l/min. The filters series UCFR can be supplied with By-pass valve in the cartridge.

Technical data complete filter

- Filter cap in aluminium alloy
- Bowl in aluminium alloy
- Max working pressure = 15 bar
- Max test pressure = 24 bar
- Burst pressure = 45 bar
- Differential collapse pressure filter elements = 3 bar
- Return line By-pass valve set at 1,7 bar ± 10%
- Suction By-pass valve set at 0,25 bar ± 10%
- Working temperature –25°C up to +95°C
- Connections: BSP – NPT threaded ports from 1/2” up to 1 1/4”

Technical data filter elements

- A/B: paper treated with resin, filtration rating 10 and 25 microns βx ≥ 2
- F/N/G/H: inorganic fibres, filtration rating 3, 6, 10 and 25 microns βx ≥ 200
- L/M: stainless steel square wire mesh (AISI 304) filtration rating 60 and 250 microns
- C/E: brass square wire mesh, filtration rating 90 and 125 microns
- End cap in Polyamide
- Support tube in galvanized steel
- Support mesh in galvanized steel with epoxy coating

Filter elements are manufactured in accordance with the following ISO standards:

- ISO 4572
  Filtration performance valuated with Multi-pass test
- ISO 2941
  Verification of collapse/burst resistance
- ISO 2942
  Verification of fabrication integrity and determination of the first bubble point.
- ISO 2943
  Compatibility of materials with fluids (type HH, HM, HR, HV, HG according with ISO 6743/4)
- ISO 3723
  Method for the end load test
- ISO 3724
  Verification of flow fatigue characteristics
- ISO 3968
  Evaluation of pressure drop versus flow characteristics
Pressure drop (in accordance with ISO 3968)

The assembly pressure drop is obtained by adding the pressure drop of the filter housing with the pressure drop of the filter element.

Filter elements pressure drop

Pressure drops in the filtering elements

All the curves have been obtained using mineral oil with kinematic viscosity of 30 cSt. The pressure drop is proportional to the variation of kinematic viscosity.

### Filters Series UCFR 30 - 60

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCFR 30</td>
<td>1/2&quot;</td>
<td>0,7</td>
</tr>
<tr>
<td>UCFR 60</td>
<td>3/4&quot;</td>
<td>1,2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Filtering area (cm²)</th>
<th>Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCFR 30</td>
<td>10 µ – 25 µ + 2</td>
<td>125 µ – 250 µ</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>280</td>
</tr>
<tr>
<td>UCFR 60</td>
<td>890</td>
<td>450</td>
</tr>
</tbody>
</table>
Filter Housing pressure drop
All the curves have been obtained with mineral oil with a density of 860 Kg/m³. The pressure drop is proportional to the variation of density.

By-pass valve pressure drop
All the curves have been obtained with mineral oil with a density of 860 Kg/m³. The pressure drop is proportional to the variation of density.

How to order the complete filter

<table>
<thead>
<tr>
<th>Size</th>
<th>By-pass valve</th>
<th>Series</th>
<th>Filtration elements</th>
<th>Seals</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Without By-pass</td>
<td>Complete filter</td>
<td>Without filter element</td>
<td>Nitrile Buna-N</td>
<td>BSP</td>
</tr>
<tr>
<td>60</td>
<td>With Suction By-pass set at 0,25 bar</td>
<td></td>
<td>A Paper treated with resin 10 µ 6x ≥ 2</td>
<td>Viton</td>
<td>NPT</td>
</tr>
<tr>
<td></td>
<td>With Return By-pass set at 1,7 bar</td>
<td></td>
<td>B Paper treated with resin 25 µ 6x ≥ 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Filtration elements:
- Without filter element
- A Paper treated with resin 10 µ 6x ≥ 2
- B Paper treated with resin 25 µ 6x ≥ 2
- C Brass square wire mesh 90 µ
- E Brass square wire mesh 125 µ
- F Inorganic fibre 3 µ 6x ≥ 200
- G Inorganic fibre 10 µ 6x ≥ 200
- H Inorganic fibre 25 µ 6x ≥ 200
- L Square wire mesh in inox (AISI 304) 60 µ
- M Square wire mesh in inox (AISI 304) 250 µ
- N Inorganic fibre 6 µ 6x ≥ 200
- R Square wire mesh in inox (AISI 304) 250 µ
- S Without By-pass
- T With Suction By-pass set at 0,25 bar
- U With Return By-pass set at 1,7 bar
- V Viton

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The assembly pressure drop is obtained by adding the pressure drop of the filter housing with the pressure drop of the filter element.

Pressure drops in the filtering elements
All the curves have been obtained using mineral oil with kinematic viscosity of 30 cSt. The pressure drop is proportional to the variation of kinematic viscosity.
Housing pressure drop
All the curves have been obtained with mineral oil with a density of 860 Kg/m³. The pressure drop is proportional to the variation of density.

By-pass valve pressure drop
All the curves have been obtained with mineral oil with a density of 860 Kg/m³. The pressure drop is proportional to the variation of density.

How to order the complete filter

<table>
<thead>
<tr>
<th>Size</th>
<th>By-pass valve</th>
<th>Filtration elements</th>
<th>Seals</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>S Without By-pass</td>
<td>- Without filter element</td>
<td>N Nitrile</td>
<td>- BSP</td>
</tr>
<tr>
<td>180</td>
<td>A With Suction By-pass set a 0,25 bar</td>
<td>A Paper treated with resin 10 µ βx ≥ 2</td>
<td>V Viton</td>
<td>1 NPT</td>
</tr>
<tr>
<td></td>
<td>R With Return By-pass set at 1,7 bar</td>
<td>B Paper treated with resin 25 µ βx ≥ 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C Brass square wire mesh 90 µ</td>
<td></td>
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</tr>
<tr>
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<td>F Inorganic fibre 3 µ βx ≥ 200</td>
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<td>G Inorganic fibre 10 µ βx ≥ 200</td>
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<tr>
<td></td>
<td></td>
<td>N Inorganic fibre 6 µ βx ≥ 200</td>
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</tbody>
</table>
Accessories

Clogging indicators

UCF-B

Pressure gauge with scale from 0 to 12 bar

UCF-D
Pressure switch with N.O. contacts set at 1,3 bar ± 10%

UCF-E
Pressure switch with N.C. contacts set at 1,3 bar ± 10%

UCF-H
Membrane pressure switch with change over contacts set at 1,3 bar ± 10%

How to order

UCF-B

UCF-D

UCF-E

UCF-H

Symbol

With By-pass

Without By-pass
Spare parts

**Cartridge series CFR**

**Size**

<table>
<thead>
<tr>
<th>Size</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>1/2”</td>
</tr>
<tr>
<td>60</td>
<td>3/4”</td>
</tr>
<tr>
<td>100</td>
<td>1”</td>
</tr>
<tr>
<td>180</td>
<td>1 1/4”</td>
</tr>
</tbody>
</table>

**Cartridge Series**

**CFR** Complete filter UCFR

**How to order**

**By-pass valve**

- **S** Without By-pass
- **A** With Suction By-pass set at 0.25 bar
- **R** With Return By-pass set at 1.7 bar

**Seals**

- **N** Nitrile Buna-N
- **V** Viton

**Filtration elements**

- **A** Paper treated with resin 10 µ x ≥ 2
- **B** Paper treated with resin 25 µ x ≥ 2
- **C** Brass square wire mesh 90 µ
- **E** Brass square wire mesh 125 µ
- **F** Inorganic fibre 3 µ x ≥ 200
- **G** Inorganic fibre 10 µ x ≥ 200
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- **N** Inorganic fibre 6 µ x ≥ 200