1. Maintenance

1.1 General
Please follow the maintenance instructions.

1.2 Installation
Before installing the filter into the system, check that the operating pressure of the system does not exceed the permitted operating pressure of the filter. Refer to the type code label on the filter.

1.3 Commissioning
Check that the correct filter element is installed. Install lid, screw in cover plate bolts alternately. Switch lever to one filter side. Switch on hydraulic system and vent filter.

1.4 Maintenance Tools

<table>
<thead>
<tr>
<th>Size</th>
<th>Torque value Nm [ft-lb]</th>
<th>Int. Lid Screws hex bolt Allen key</th>
</tr>
</thead>
<tbody>
<tr>
<td>60/110</td>
<td>20 Nm [14]</td>
<td>Hex 6</td>
</tr>
<tr>
<td>160/240</td>
<td>20 Nm [14]</td>
<td>Hex 6</td>
</tr>
<tr>
<td>330</td>
<td>40 Nm [29]</td>
<td>Hex 8</td>
</tr>
<tr>
<td>660</td>
<td>150 Nm [110]</td>
<td>Hex 14</td>
</tr>
<tr>
<td>950/1300</td>
<td>200 Nm [147]</td>
<td>Hex 17</td>
</tr>
</tbody>
</table>

1.5 Torque Values

<table>
<thead>
<tr>
<th>Type</th>
<th>Torque Nm[ft-lb]</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR clogging indicator</td>
<td>30 [22]</td>
</tr>
</tbody>
</table>

1.6 Torque Values for Reservoir Mounting Bolts

<table>
<thead>
<tr>
<th>Size</th>
<th>Torque Nm [ft-lb]</th>
<th>Bolt Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFD 60/110</td>
<td>5 [3.7]</td>
<td>M5</td>
</tr>
<tr>
<td>RFD 950/1300</td>
<td>25 [19]</td>
<td>M16</td>
</tr>
</tbody>
</table>

2. Element Replacement

2.1 Element Removal
1. Switch lever slowly over to clean filter side.
2. Size 60-330:
   - Loosen cover plate bolts and lift off the cover plate.
   - Unscrew cover plate bolts by approx. 2 turns (no need to remove completely).
   - Turn cover plate clockwise until it can be lifted off by holding near the bolts (bayonet fitting).
3. Pull out filter element(s) (with contamination retainer, if present) by the handle. Examine element surface for dirt residues and larger particles since these can be an indication of damage to components.
4. Remove contamination retainer (if present) by turning counter-clockwise – bayonet fitting.
5. Replace or clean filter element(s) (only W/HC and V elements can be cleaned).
6. Clean housing, cover plate and contamination retainer.
7. Examine filter, especially sealing surfaces, for mechanical damage.
8. Check O-rings – and replace if necessary.

2.2 Element Installation
1. Lubricate the sealing surfaces on the filter housing and cover plate, as well as the O-ring, with clean operating fluid.
2. When installing a new filter element, check that the designation corresponds to that of the old element.
3. If present, install the contamination retainer onto the new or cleaned filter element by turning clockwise.
4. Place filter element carefully on to the element nozzle in the housing.
5. Sizes 60-330:
   - Replace cover plate and screw in cover plate bolts by hand; then tighten bolts alternately.
   - Sizes 660-1300:
     - Replace cover plate in correct position (dowel pin in the housing must line up with groove in cover plate) and turn counter-clockwise as far as it will go. Tighten cover plate bolts alternately.
6. Vent filter at an appropriate point in the system.
7. Check filter for leakage.

NOTE:
Contamination or incomplete pressure release on disassembly can lead to seizing of the bowl thread.
Filter elements which cannot be cleaned must be disposed of in accordance with environmental protection regulations.
FILTER MAINTENANCE

3. Spare Parts

3.1 RFD 60-1300

<table>
<thead>
<tr>
<th>Item</th>
<th>Consists</th>
<th>Designation</th>
<th>RFD 60†</th>
<th>RFD 110†</th>
<th>RFD 160†</th>
<th>RFD 240†</th>
<th>RFD 330**</th>
<th>RFD 660** 1.0</th>
<th>RFD 660** 1.1</th>
<th>RFD 950 1.0</th>
<th>RFD 950 1.1</th>
<th>RFD 1300 1.0</th>
<th>RFD 1300 1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Filter element</td>
<td>0060 R... 0110 R... 0160 R... 0240 R... 0330 R... 0660 R... 0660 R... 0950 R... 1300 R... 0950 R... 1300 R...</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>O-ring</td>
<td>22 x 3.5</td>
<td>34 x 3.5</td>
<td>48 x 3</td>
<td>68 x 5</td>
<td>68 x 5</td>
<td>97.8 x 5.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Clogging indicator or indicator plug</td>
<td>See Point 5. Replacement clogging indicator</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Indicator plug</td>
<td>VR 0 A.O</td>
<td>00306006</td>
<td>00305928</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>O-ring</td>
<td>18 x 2.5</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>Seal kit RFD Seal kit RFD -V</td>
<td>1272908</td>
<td>1272912</td>
<td>2 x 00319613</td>
<td>2 x 303792</td>
<td>2 x 1293042</td>
<td>2 x 1293039</td>
<td>1261127</td>
<td>1261128</td>
<td>2065071</td>
<td>2073676</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>O-ring (element)</td>
<td>22 x 3.5</td>
<td>34 x 3.5</td>
<td>48 x 3</td>
<td>68 x 5</td>
<td>68 x 5</td>
<td>97.8 x 5.33</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>O-ring (cover plate)</td>
<td>63.09 x 3.53</td>
<td>91.67 x 3.53</td>
<td>105 x 5</td>
<td>142 x 6</td>
<td>153 x 5</td>
<td>175 x 5</td>
<td>185 x 5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>O-ring (indicator)</td>
<td>18 x 2.5</td>
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</tr>
<tr>
<td>3.4</td>
<td>O-ring (tank seal)</td>
<td>82.14 x 3.53</td>
<td>110.72 x 3.53</td>
<td>00405588</td>
<td>03170653</td>
<td>03170653</td>
<td>00405590</td>
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<tr>
<td>4.</td>
<td>Contamination retainer RF/D... Contamination retainer RF/D... HC</td>
<td>00245028</td>
<td>00246164</td>
<td>00245029</td>
<td>00246182</td>
<td>00245030</td>
<td>00245031</td>
<td>00245031</td>
<td>00413196</td>
<td>00400985</td>
<td>00413196</td>
<td>00400985</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Contamination retainer RF/D...</td>
<td>01202362</td>
<td>01202363</td>
<td>01202364</td>
<td>01202357</td>
<td>01202357</td>
<td>01204141</td>
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<tr>
<td>5.</td>
<td>Lever RFD...</td>
<td>00270338</td>
<td>00270333</td>
<td>01205525</td>
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</tr>
</tbody>
</table>

*If present

Other spare parts on request

- O-Ring durometer can range from 70-80Sh. EPR Seal Kits available on request.
- Lid assembly kits on request - kits include complete lid with seals, vent plug (if present). Bolts not included.
† For RFD 61, 111, 161, 241 seal kits consult HYDAC.
**RFD 330 and RFD 660 repair kits also available.
4. Replacement Element Code

**Size**
- 0060, 0110, 0160, 0240,
- 0330, 0660, 0950, 1300

**Filtration Rating (micron)**
- 1, 3, 5, 10, 15, 20 = ON
- 3, 10 = BN4AM
- 3, 5, 10, 20 = ECON2
- 25, 74, 149 = W/HC
- 10, 20 = P/HC
- 3, 5, 10, 20 = V

**Element Media**
- ON, BN4AM, ECON2, AM, W/HC, P/HC, V

**Seals**
- (omit) = Nitrile rubber (NBR) (standard)
- V = Fluorocarbon elastomer (FKM)
- EPR = Ethylene propylene rubber (EPR)

**Bypass Valve**
- (omit) = 43 psid (3 bar) (standard)
- B1 = 14.5 psid (1 bar)
- B2 = 29 psid (2 bar)
- B6 = 87 psid (6 bar)
- KB = no bypass

**Supplementary Details**
- SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids
- SFREE = Element specially designed to minimize electrostatic charge generation

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5. Replacement Clogging Indicator

**Indicator Prefix**
- VR = Return Filters

**Trip Pressure**
- 2 = 29 psid (2 bar) (return filters)
- 5 = 72 psid (5 bar) (optional)

**Type of Indicator**
- A = No indicator, plugged port
- B = Pop-up indicator (auto reset - static only)
- BM = Pop-up indicator (manual reset)
- C = Electric switch - SPDT
- D = Electric switch and LED light - SPDT
- E = Visual pressure gauge

**Modification Number**

**Supplementary Details**

**Seals**
- (omit) = Nitrile rubber (NBR) (standard)
- V = Fluorocarbon elastomer (FKM)
- EPR = Ethylene propylene rubber (EPR)

**Light Voltage** (D type indicators only)
- L24 = 24V
- L48 = 48V
- L110 = 110V
- L220 = 220V

(For additional details and options, see Section G - Clogging Indicators.)
6. Maintenance Instructions

6.1 User Instructions for Filters

- This pressure equipment must only be put into operation in conjunction with a machine or system.
- The pressure equipment must only be used as stipulated in the operating instructions of the machine or system.
- This pressure equipment must only be operated using hydraulic or lubricating fluid.
- It is the responsibility of the operator to comply with the water regulations of the country concerned.

6.2 Maintenance, General

This section describes maintenance work which must be carried out periodically. The operational safety and life expectancy of the filter, and whether it is ready for use, depend to a large extent on regular and careful maintenance.

6.3 Maintenance Measures

- Spare parts must fulfil the technical requirements specified by the manufacturer.
- This is always ensured when using original HYDAC spare parts.
- Keep tools, working area and equipment clean.
- After disassembling the filter, clean all parts, check for damage or wear and replace parts if necessary.
- When changing a filter element, a high level of cleanliness must be observed.

6.4 Interval Between Element Changes

In principle we recommend that the filter element is changed every 6 months or upon indication, whichever occurs first.

We recommend installing the filter with a clogging indicator (visual and/or electrical or electronic) to monitor the filter element.

When no clogging indicator has been installed, we recommend changing the elements at specific intervals. (The frequency of changing the filter elements depends on the filter design and the conditions under which the filter is operated). When filter elements are subject to high dynamic loading it may prove necessary to change them more frequently. The same applies when the hydraulic system is commissioned, repaired or when the oil is changed.

The standard clogging indicators only respond when fluid is flowing through the filter. With electrical indicators the signal can also be converted into a continuous display on the control panel. In this case the continuous display must be switched off during a cold start or after changing the element.

If the clogging indicator responds during a cold start only, it is possible that the element does not yet need to be changed.

Customer Information in respect of Machinery Directive 2006/42/EC

Hydraulic filters are defined as fluid power parts / components and are therefore excluded from the scope of the Machinery Directive, sections 1.4.1 - 1.4.3. They do not bear the CE mark.

Before using these components, ensure compliance with the specifications provided by HYDAC Technology Corporation. The specifications also contain information on the relevant essential health and safety requirements (based on Machinery Directive 2006/42/EC).

We hereby declare that the filters are intended to be incorporated into machinery within the terms of the Directive 2006/42/EC. It is prohibited to put the filters into service until the machinery as a whole is in conformity with the provisions of the Machinery Directive.

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NOTE
The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.
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