Index
1. General
1.4 Tools Required for Maintenance
1.5 Torque Requirements
2. Maintenance
3. Changing the Element
4. Spare Parts List
5. Replacement Element Model Code

NOTE: All details subject to technical modification
FILTER MAINTENANCE

1. General

1.1 Commitment to Quality

HYDAC demonstrates its commitment to quality through the implementation of an ISO 9001: 2008 program, which encompasses not only product design and manufacturing but service and delivery as well.

1.2. Installation

- Before installing the filter in the system, check that the operating pressure of the system does not exceed the maximum allowable operating pressure of the filter.
- Observe type code label on the filter.
- Important: When operating filters without bypass valve above 150 psi, filter elements of the type BH must be used to ensure safe operation.

1.3. Commissioning

Unscrew lid and check that the correct filter element is installed. Screw on lid again fully (metal to metal contact). Switch on hydraulic system and check filter for leakage.

1.4. Tools Required for Maintenance

<table>
<thead>
<tr>
<th>Size</th>
<th>Wrench Opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lid</td>
<td>41.3 mm</td>
</tr>
<tr>
<td>Drain Plug</td>
<td>22.2 mm</td>
</tr>
<tr>
<td>VD0A.1</td>
<td>27 mm</td>
</tr>
</tbody>
</table>

1.5. Torque Values

<table>
<thead>
<tr>
<th>Type</th>
<th>Max. Torque Nm/ft-lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>VD...,LE/LZ clogging indicators</td>
<td>50 [37]</td>
</tr>
<tr>
<td>VM all clogging indicators</td>
<td>30 [22]</td>
</tr>
<tr>
<td>Oil Drain Plug</td>
<td>SAE-8 52 [38]</td>
</tr>
<tr>
<td>Bowl/Lid or end cover</td>
<td>Do not Torque</td>
</tr>
<tr>
<td></td>
<td>See 1.3 and 3.2</td>
</tr>
</tbody>
</table>

2. Maintenance

2.1. General

This section describes periodic maintenance requirements. Periodic and thorough maintenance will ensure operator safety and the life of the filter.

2.2. Maintenance Procedures

- Only high quality spare parts meeting the technical requirements specified by the manufacturer should be used, quality is always guaranteed with HYDAC original spare parts.
- Keep tools, working area and equipment clean.
- After disassembling the filter, clean all parts and check for damage or wear. Replace parts as required.
- When changing filter elements, a high level of cleanliness must be observed.

2.3. Interval Between Changing Elements

- To ensure optimum performance, HYDAC recommends replacing filter elements every 6 months or upon indication, whichever occurs first.
- HYDAC recommends installing the filter with a clogging indicator (visual and/or electric or electronic) to monitor for excessive filter element pressure drop.
- If the clogging indicator trips, immediately change or clean the filter element. (Only W elements can be cleaned).
- If no clogging indicator is installed, HYDAC recommends changing elements at specified intervals (depends on filter sizing and conditions). Higher dynamic loads across the element might necessitate shorter intervals between changes. Shorter intervals can also be expected during commissioning, repairs, oil changes, etc. of the hydraulic system.

3. Element Replacement

3.1. Element Removal

1. Switch off hydraulic system.
2. If filter is a system low point, isolate the filter from the system. Otherwise, continue to Step 3.
3. Vent/release filter pressure
4. Remove oil drain plug (if present). Drain oil into a suitable container.
5. Remove lid from housing. It may be necessary to use a strap wrench to prevent the housing from coming off of the filter head. Caution: Cap is spring loaded.
6. Remove spring and grommet cap.
7. Remove filter element from element location nozzle in the filter head (examine surface of element for dirt residue and larger particles; these can indicate damage to the components).
8. Replace filter element.
9. Clean lid and housing, paying particular attention to the threads.
10. Examine filter, especially sealing surfaces, for damage.
11. Check seals and replace if necessary.

3.2. Element Installation

1. Lubricate sealing surfaces and threads, as well as the seals with clean operating fluid.
2. When installing a new element, verify that the designation corresponds to that of the old element.
3. Place filter element carefully onto the element location nozzle in the filter housing. In addition: Insert grommet cap in top element. Insert spring into grommet cap.
4. Screw in lid fully (metal to metal contact).
5. Screw in oil drain plug (if present).
6. Fill the filter housing with system fluid until it is level with the top of the vent plug port.
7. Install vent plug.
8. Switch on hydraulic system and vent filter at an appropriate point in the system.
9. 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 regulations.
4. Spare Parts

4.1. HF4RL

<table>
<thead>
<tr>
<th>Item</th>
<th>Consists of</th>
<th>Designation</th>
<th>09</th>
<th>18</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Filter element</td>
<td>See point 5 Replacement elements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Filter element</td>
<td>On request</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>Grommet</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Clogging indicator or indicator plug</td>
<td>See Filter Clogging Indicator brochure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VD 0 A.1</td>
<td></td>
<td>00305932</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VD 0 A.1 /-V</td>
<td></td>
<td>00305931</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Indicator plug</td>
<td>VD...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Profile seal ring</td>
<td>VD...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>O-ring</td>
<td>15 x 1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>SEAL KIT-E VD</td>
<td></td>
<td>00319648</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEAL KIT-E VD /-V</td>
<td></td>
<td>00319638</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Profile seal ring</td>
<td>VD...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>O-ring</td>
<td>15 x 1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>SEAL KIT HF4RL NBR</td>
<td></td>
<td>2088185</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEAL KIT HF4RL FKM</td>
<td></td>
<td>2097121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Grommet (element)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>O-ring (lid)</td>
<td>110.72 x 3.53 (AS568A-245)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Profile seal ring (VD 0 A.1)</td>
<td>VD...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>O-ring (VD 0 A.1)</td>
<td>15 x 1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>Oil drain plug O-ring</td>
<td>16.36 x 2.21 (AS568A-908)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.6</td>
<td>Vent plug O-ring</td>
<td>8.92 x 1.83 (AS568A-904)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other spare parts available on request.

Bold items can be ordered.

- 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).
5. Replacement Element Model Code

Size
09, 18, 27

Filtration Rating (micron)
3, 5, 10, 20 = BH 3, 5, 10, 20 = BN
25, 74, 149 = W

Element Media
BN, BH, W

Seals
(omit) = Nitrile rubber (NBR) (standard)
V = Fluorocarbon elastomer (FKM)

Supplementary Details
W = Modification of “W” elements for use with oil water emulsions (HFA) and water polymer solutions (HFC)
SFREE = Element specially designed to minimize electrostatic charge generation

6. 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.