De-Oiling of a Parts Cleaning System with the PLF-1C

**Technical Application Bulletin**

**PROJECT BACKGROUND**

- Customer manufactures hydraulic accumulators.
- Components are washed in a parts cleaning system.
- High oil input from various upstream work processes in the washing bath of the system.
- Its current gravitational oil separator does not meet the requirements of the customer.
- Problems with the subsequent welding process due to filmic contamination.

**DISCOVER**

**DIAGNOSE**

- Increase oil separation in the cleaning fluid of the system.
- Improvement of component cleanliness (especially filmic contamination).
- Extension of the service life of the washing medium.

**DESIGN**

<table>
<thead>
<tr>
<th>Gravity oil separator</th>
<th>Schroeder PLF1C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid volume</td>
<td></td>
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<tr>
<td>400 L</td>
<td>90 L</td>
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<tr>
<td>Separation (oil / day)</td>
<td></td>
</tr>
<tr>
<td>10 mL</td>
<td>1 L</td>
</tr>
<tr>
<td>Operating conditions</td>
<td></td>
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<tr>
<td>19 shifts per week</td>
<td>19 shifts per week</td>
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</tbody>
</table>

**Test Setup (application-related values)**

- **Gravity oil separator:** Dimensions mm: (LxWxH) approx. 67”x27”x79”
- **Schroeder PLF-1C Coalescer:** Dimensions mm (LxWxH) approx. 14”x18”x79”
  - $Q_{\text{max}}$ 8.8gpm
  - $p_{\text{max}}$ 28 psi
  - Filtration rating 10 µm

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**DELIVER**

<table>
<thead>
<tr>
<th>Gravity Oil Separator</th>
<th>Schroeder PLF-1C</th>
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</table>
| **After approx. 80 h**
| **Separated Oil** | **4.2 L** |
| **0.04 L** | **26 gal** (test period approx. 1.11 gal*) |
| **2.853 gal** | **105.67 gal** |
| **27.7%** | **100%** |

**CUSTOMER BENEFITS**

- Inline-separation in partial flow reducing plant downtime → no bath-calming necessary
- Less man-hours for maintenance due to higher machine availability
- Reduction of rejects and minimum of adjustments

**FURTHER APPLICATION AREAS**

- Washing after hardening / quenching
- Washing before coating processes
- Washing after hardening processes
- Washing before gluing processes
- Washing of container boxes
- Washing after honing

**ROI**

- **Cost Savings p.a.**
  - $54K
- **Water Savings**
  - 9,510 gal
- **Volume Savings**
  - 81.9 gal

**Cost Savings**

- 27.7%

The customer operates a total of 4 lines with the following optimization potential.

**PRODUCT SPECS**

**PLF-1C | Coalescer Separator**

- Combination out of coalescer and Gravity oil separation in one compact PLF1 housing
- Continuous bypass-maintenance of the fluid during system operation by removing a partial flow from the filtered process fluid
- Ideal for retrofitting → use of existing system peripherals