PROCESS RELIABILITY / TECHNICAL CLEANLINESS

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

*Technical Application Bulletin*

## PROJECT BACKGROUND

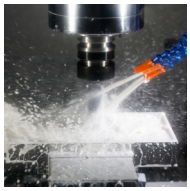
### DISCOVER

- 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.

### 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.

## INDUSTRIES

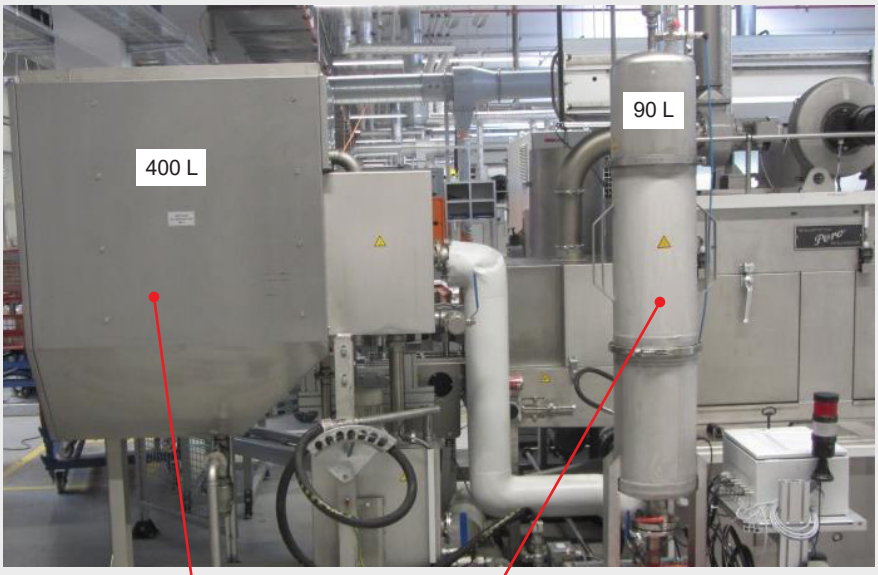




## DESIGN

| | Gravity oil separator | Schroeder PLF1C |
|---|---|---|
| Fluid volume | 400 L | 90 L |
| Separation (oil / day) | 10 mL | 1 L |
| Operating conditions | 19 shifts per week | 19 shifts per week |

**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”
$Q_{max}$ 8.8gpm $p_{max}$ 28 psi Filtration rating 10 µm

## DELIVER


| Results: | SCHROEDER PLF-1C | | Gravity Oil Separator |
|---|---|---|---|
| Volume oil separator | 23.77 gal | | 105.67 gal |
| Separation oil / day | .26 gal (test period approx. 1.11 gal*) | | 10 ml (test period: approx. 0.01 gal*) |
| Change interval washing fluid | Every 3 weeks | Gain of lifetime! | Weekly |
| Waste water / plant p.a. | 2,853 gal | Saving of waste water! | 12,363 gal |
| Costs / plant p.a. | 27.7% | Cost saving! | 100% |
| Total costs p.a. | 27.7% | | 100% |

- 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

## 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.

## CUSTOMER BENEFITS

- Improvement of bath-lifetime
- Lower energy costs
- Less wastewater volume when changing fluids
- Reduced dosing requirements cleaning fluids
- Reduced installation area
- Reduced resource consumption
- Increased circulation

## 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

## 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**