



descase.com



# Importance of Oil Cleanliness on Aluminum Extrusion Presses



Success Story

## INDUSTRY DESCRIPTION:

The use of aluminum extrusion in product design and manufacturing has increased significantly in recent decades. In the extrusion press, the hydraulic system is a critical component. Uptime of the press is essential for production, and hydraulic failures are the most common cause of downtime. Studies show that 80 percent of these hydraulic failures are caused by contaminated fluid.

Aluminum extrusion presses are complex 24/7 operating systems with oil reservoirs of up to 20,000 L and large pump rooms. The piston pumps are often controlled by servo valves. Failures of the servo valves and excessive pump wear can lead to costly repairs, and long periods of downtime can be catastrophic to the production process. The piston pumps used on extruders can cost \$4,000 not including labor, with servo valve replacement typically around \$2,000.

## THE CHALLENGE:

A large aluminum extruding company in Austria experienced breakdowns on their special seals of an SMS Group extrusion press. This led to large contamination issues within the hydraulic system of the press. Lab analysis determined ISO cleanliness levels of 24/22/18.

- Capacity: 22 tons
- Oil Reservoir: 18,000 L
- Type of Oil: Mineral oil ISO VG 68

## THE SOLUTION:

To solve the contamination issue, the Des-Case distributor installed two RMF Systems Off-Line Filtration Units (OLU4B, OLUS4B) with depth filtration media and a Contamination Monitoring Sensor (CMS). The OLUs act as a kidney loop in the reservoir and remove solid particles. The CMS automatically measures and displays particulate contamination, moisture and temperature levels in the reservoir.

## THE RESULTS:

On an annual basis, the press is inspected by a third party. After installing the two Off-Line Units, the ISO cleanliness level improved drastically, dropping from a 24/22/18 to a very clean 14/12/7. As a result, the life span of the oil has been extended by three to five times, saving the company approximately \$25,000 each time they did not need to change their oil.

### ISO Cleanliness Level

Before:

After:

**24/22/18** to **14/12/7**

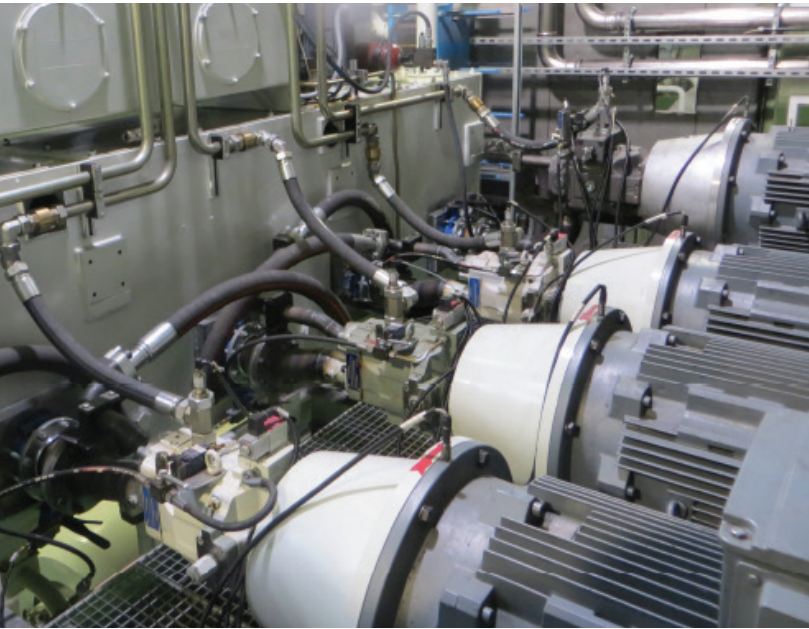
Savings:

**\$25,000 PER OIL CHANGE**



Due to the success of this application, the aluminum extrusion plant added the OLU4B and OLUS4B configuration to two additional presses and saw similar results.

Additionally, over the past five years, there have been no valve or pump changes necessary as the sludge in the tank and the varnish on the components were removed. The manufacturer was able to reach a return on investment within a year of installation.



### **Danieli 18T**

- **Oil Reservoir:** 14,000 L, ISO VG 68
- **Before:** ISO 22/18/16
- **After:** ISO 14/10/8

### **SMS Group 20T**

- **Oil Reservoir:** 17,000 L, ISO VG 68
- **Before:** ISO 23/19/16
- **After:** ISO 13/11/8

## **HOW CAN WE HELP?**

Managing fluid contamination levels is a key factor in hydraulic system reliability. Particle contamination in the oil is responsible for the majority of hydraulic valve failures. Let the experts at Des-Case get you on the path towards lubrication excellence and extended asset reliability.

### **UNITED STATES**

675 N Main Street  
Goodlettsville, TN 37072  
+1.615.872.8800

### **EUROPE**

Coenecoop 99, 2741 PH  
Waddinxveen, The Netherlands  
+31 (0) 182.24.48.88