

RMF Systems Case

FOMAS SAVES COSTS AND ENVIRONMENT WITH CUSTOM-MADE FILTRATION SOLUTION

The Fomas steel plant in Osnago, Italy was having contamination issues with the oil used for the forging press and its complementing manipulator. This critical equipment is working under pressures up to 380 bar and failure or downtime of this equipment has major consequences for the productivity and profit of the plant. Replacing the 175.000 litres of oil (160.000 litres for the forging press and 15.000 litres for the manipulator) would be a very costly solution with significant environmental impact.

Challenge

IFH Filters, the local partner of RMF Systems, executed an oil analysis which showed an oil cleanliness level of ISO 19/18/14. The larger 10 μ and 20 μ particles were found in the standard fitted filter elements, which were not suitable to filter out the smaller particles. Small particle contamination tends to be a problem, especially in high pressure equipment. The analysis also showed a large amount of sludge and a high TAN level. The amount and size of particle contamination and the acid levels found in the oil indicated a rapid decrease of the most important characteristics of the oil. To prevent downtime, equipment failure or high maintenance costs, a costly replacement of the oil seemed to be the only option.



Solution

RMF Systems together with IFH Filters designed a custom-made solution for Fomas: 'The MultiPure'. A very compact, offline filtration system containing 19 highly efficient Radial Micro Filtration elements was designed to filter the 160.000 litres of oil of the forging press. To filter the 15.000 litres of oil of the manipulator, another tailor-made filtration solution containing 7 elements was fabricated. These filtration solutions are optimal for the filtration of large quantities of oil and didn't require any modification to Fomas' equipment.

The Radial Micro Filtration (RMF) technology used has been developed by RMF Systems. This RMF principle is based on a radial flow of the oil through the filter media. RMF Systems utilises over more than 200 layers of cellulose for its filter elements to efficiently filter very small solid and water particles out of oil and prevent contamination of hydraulic fluids.

Results

After installation and commissioning of the MultiPure and the filtration unit for the manipulator, another analysis of the oil was done. The new results showed an improved cleanliness level, and after a couple of months, the ISO level was down to 14/13/9. IFH Filters regularly provides Fomas with oil analysis and the results since the installation of the filtration systems have been very steady. The amount of small particles has drastically decreased, the sludge has almost disappeared and the TAN level of the oil is stabilized.

With the tailor-made filtration solution and the utilisation of RMF Systems filter elements and components, Fomas extended the lifetime of the hydraulic oil by years. This saved a significant amount of money, reduced the environmental impact of the plant and reduced downtime and malfunctions. Based on the regular oil analyses Fomas even set up a predictive maintenance program, which significantly reduces the maintenance cost of the plant.