



Application: Pulp and Paper

ISOPur Fluid Technologies solves problem of sticking servo valves in super-calender machinery within a paper mill

Introduction

Servo valves are a vital component within a paper mill and are often the source of failures. Servo valves in a multi-national paper mill were sticking as a result of the accumulation of sub-micron particles within the lubricating fluid. Small particles were catching in the critical clearances within the valves. A buildup formed, eventually causing the valves to stick in the closed position. The result was costly unscheduled maintenance and downtime.

The Challenge

A large, multinational paper company was searching for a solution to their servo valve failures, which were occurring between seven and twelve times per year. Each failure cost approximately \$30,000 and included at least two hours of downtime. The valve failures, if not caught in time, were also directly affecting the end product by producing low quality or, in some cases, unusable product. ISOPur was to prove that its Balanced Charge Purification (BCP) technology could succeed where standard filtration systems had failed.

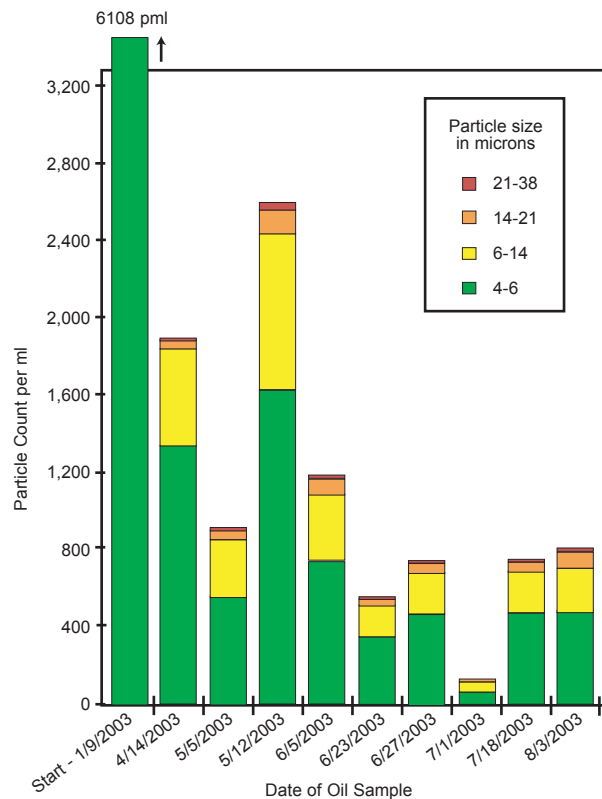
The Solution

On January 14th, 2003, an ISOPur Purification System was installed at the paper mill on a super calender machine. The unit was attached to a 790 gallon reservoir of Exxon Teresstic N220 oil which fed servo valves on a super-calender machine. Beginning on February 17th, samples were drawn by the paper mill's employees on a weekly basis from the tank by way of a dip sample. The oil analysis immediately showed a dramatic reduction in contamination levels.

During the course of the test, the particle counts in the oil fluctuated (see graph). This is typical of systems first employing the BCP technology. This variance is due to the scouring of the lubrication path. Years of sludge and varnish buildup is pulled

from the internals of the system, thus causing the particle count to increase. Once removed, the particle count drops and stabilizes.

Oil Sample Particle Count and Distribution



The Return

This large, international paper company's annual cost incurred due to the servo valve problems on a single machine was historically over \$200,000 per year. By investing in the ISOPur BCP system, the customer received a return on investment of over 300% and a payback in under five (5) months time. During the six (6) month BCP purification period, this particular production line experienced record up-time and not one servo valve failure.