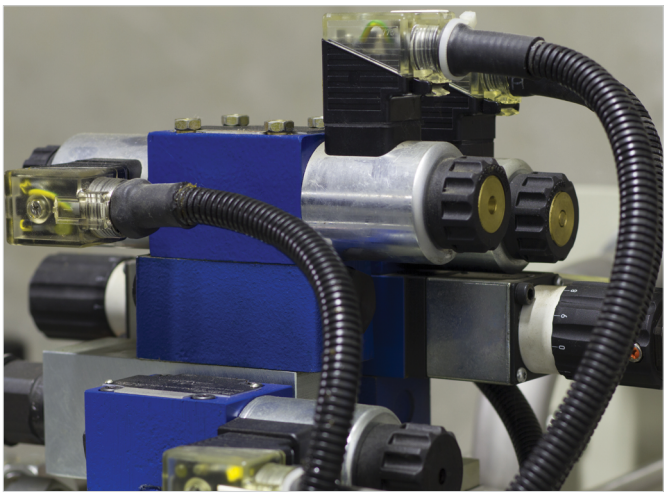
HY-PRO FILTRATION

Valve Performance Testing & Clean Oil

The Application

A hydraulic valve manufacturer required pristine fluid (< 14/12/9) to test flow across an 80 micron orifice on their test stand. Gross amounts of contamination in the fluid would skew the test results, invalidating any data collected. The system held 100 l (26.4 gal) of ISO VG 32 fluid with a flow rate of 25 lpm (6.6 gpm).



The Problem

Through observing the manufacturer's sampling practices, discussing fluid handling best practices and interpreting their lab reports; 3 independent problems were identified:

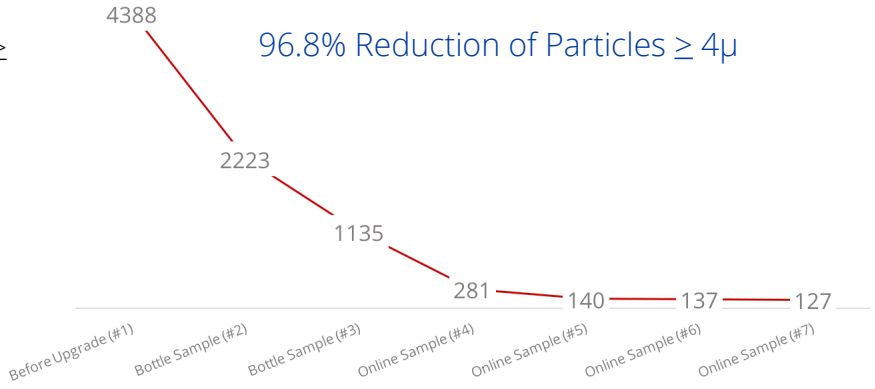
1. Insufficient Filtration – The current 12µ filter had allowed the ISO code to elevate to 19/18/16 (4388 / 2413 / 610).
2. New Oil ≠ Clean Oil – New oil was believed to be clean oil and it was not being conditioned when added to their system. New oil is not clean oil, in our experience, it usually has an ISO code around 25/22/19 (304,800 / 381,000 / 4763).
3. Bottle Sampling Practices – Observing the manufacturer's sample collection procedures (after the filtration upgrade) revealed that the samples were being contaminated through improper valve & bottle flushing due to poor sample collection practices.

The Solution

Opportunities to improve fluid handling/sampling practices were identified and the onboard filtration was upgraded from a 12µ filter to a 1µ filter element (HP52NL10-1MB).

The Results

Online particle counts showed ISO codes had been reduced to 14/11/0 (127 / 16 / 0) which represented a 96.8% reduction in particles ≥ 4µ in size and enabled the manufacturer to complete the testing of their new valve.



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