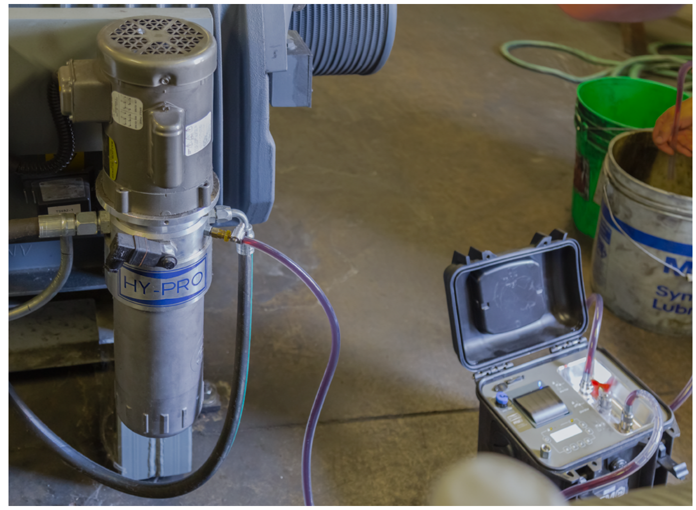
Plastic Injection Molding

Problematic ISO Codes, Premature Fluid Replacement & Varnish Buildup

The Problem

In this case study, a ceramic molding facility faced a severe contamination issue inside their process vacuum pumps. Dirt and varnish accumulation were causing unexpected downtime and high oil replacement rates. ISO cleanliness codes reached 22/20/14, well above the Donaldson Hy-Pro recommended 15/13/10 for a bearing lubrication. The expensive synthetic oil in this application, with a 2.25 year, 20,000 hour rating, only lasted the facility about 6-8 months.



The Solution

Consultation with Donaldson Hy-Pro determined the best solution for this case was Donaldson Hy-Pro's Compact Offline Filter (COF) with VTM media, designed to combat all three types of oil contamination – dirt, water, and varnish.

The Results

One month after installation, ISO codes had plummeted, achieving an impressive cleanliness code of 13/11/7. When comparing the actual particle counts, the COF with VTM media reduced the number of particles by a dramatic 99.9%, slashing the original count from 37,076 particles 4 micron and larger per ML to 46. This amounts to be about a thimble full of dirt. The COF cut the water content in half as well, dropping from 210.75 parts per million to 113.5 parts per million.

After the installation, the already very low MPC also fell from 3.8 to 1.7. Maintaining this low varnish potential, measured by MPC, helps prevent R&O additive package depletion and helps ensure no varnish or sludge deposits result from high temperatures.

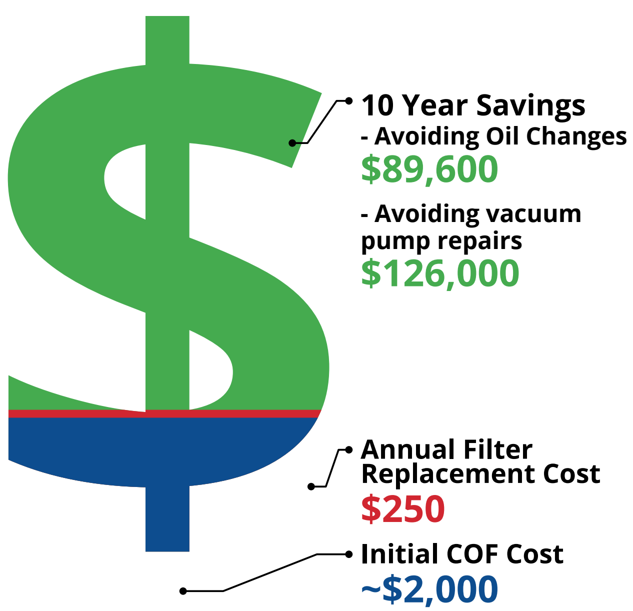
Now shielded by the COF and VTM media, the useful oil life should meet and even exceed its 2.25 year, 20,000 hour rating. We will keep this case study updated.

1 COF Compact Offline Filter

+ VTM Media

99.9% Particulate Reduction

BEFORE	AFTER
22/20/14	13/11/7



The Conclusion

With help from Donaldson Hy-Pro, this ceramic molding facility began treating their lubricating fluid as an asset. By implementing a proactive instead of reactive maintenance plan, the facility was able to save over $6,710 in the first year after purchasing Donaldson Hy-Pro's COF with VTM. After 5 years of service, accounting for $250 of annual filter replacement costs and 5-year vacuum pump replacement, their savings could skyrocket to over $105,550. Extended over a decade, this ceramic molding facility may save over $200,000 in oil changes and vacuum pump replacements, not including avoided downtime.

This case study highlights how a strategic approach to fluid cleanliness can deliver measurable savings and utilize the full value of high-performance lubricants, turning fluid management from a financial burden to a competitive advantage.

Want to find out more? Get in touch.

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