



The Leader in Industrial Magnetic Filtration

Case Study

Komatsu 930E Fleet: Wheel Motors
Magnetic Filter Plugs as Predictive
Maintenance Tools
Mongolia, 2017

Problem:

OEM Magnetic Plugs were ineffective in removing wear debris generated within GE wheel motors on a fleet of 930E Komatsu haul trucks.

Ceramic magnets inherently present several pragmatic issues due to low field strength:

1. Contaminant holding capacity is limited creating inefficiency in removing wear particulate under 10 microns.
2. Ceramic magnets can not be encased in a protective material without losing over half their magnetic field strength.
3. Ceramic magnetic material is brittle; when exposed to high vibration or temperature variance, they fracture in severe service applications. They can not be used in machinery that experiences excessive stress or flexing without chipping or wearing—this leads to the introduction of magnetic wear particulate in lube oils.

Solution:

Techemonics Mongolia suggested replacing all OEM ceramic magnetic plugs with OEI Magnetic Filter Plugs on the fleet of 28 Komatsu 930E Haul Trucks. 448 OEI Magnetic Filter Plugs were outfitted across the fleet with 8 plugs on each wheel motor.

OEI Magnetic Filter Plugs filter ferrous and non-ferrous contamination to a submicron level ensuring the highest quality fluid cleanliness.

Results:

Because of the quality of OEI magnetic filtration, a Magnetic Filter Plug inspection program was implemented utilizing the OEI Magnetic Filter Plugs as preventative maintenance tools. These Magnetic Filter Plugs are continually reviewed to ensure levels of debris are quantified and analysed.

Return on Investment (ROI):

Since the implementation of the inspection program, November 4th 2016, there have been 3632 Magnetic Filter Plugs inspected with no requirement to replace any wheel motors.

The customer is happy that OEI Magnetic Filter Plugs have prevented costly, catastrophic equipment breakdowns due to wheel motor failure.

Recommendation:

Install OEI Magnetic Filtration on all Haul Truck fluid applications such as coolant, fuel, lube oil, gear oil, and engine oil to ensure optimum equipment reliability.

