

Brake Cooling Hydraulic Systems on CAT 994H Loader Guarded by MAG-SHIELDS®

The Problem

October 2019

Brake system reliability and durability were being compromised by heavily contaminated cooling oil resulting in premature failures and reduced component life. All four brakes share a common reservoir and hydraulic fluid, and the factory system is unfiltered. Contamination in any one brake assembly can contribute to wear in other parts of the brake system. Most of the contamination in the fluid is ferrous.

The Solution

Installation of Bay6 Solutions' Mag-Shield magnetic filters provides the only form of filtration for the braking system and significantly reduces the costs and frequency of system failures. Contamination returning to the hydraulic tank from any component is immediately captured and held by Mag-Shields preventing its spread. Following repairs, residual contamination is captured and prevented from recirculating. Having the ability to filter the oil results in much cleaner cooling oil. This reduces component wear which results in increased component life and reduced failure rates.

The Results

These images represent Mag-Shield performance over a period of 5000 hours, in a 994H loader operating at an Australian mine site. During this timeframe, there were no failures within the brake cooling circuit. Over the course of normal operation, 50 grams of ferrous material was collected by the Mag-Shields. Capturing the material that is produced during normal operation is key to improving oil cleanliness and component life, which helps mitigate failures. The result: less disruption for operations, planning and maintenance; improved availability and significant savings.



**MAG-SHIELD® After 5154 Hours
of Normal Operation (No
Failure) (3.4 kg)**



**Clean MAG-SHIELD® Indicating
50 grams of Ferrous Material
Contamination**