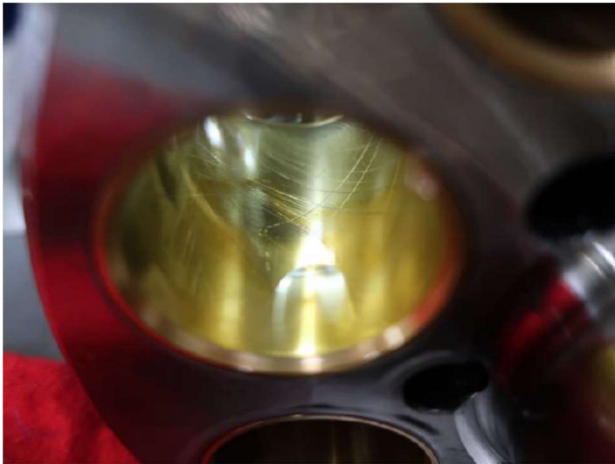


## MAG-SHIELDS® Reduce Repeat Failures and Fluid Contamination Alarms in Hitachi EX5600 Excavator

### The Problem

October 2019

A fleet of excavators operated at an Australian mine were suffering long term successive failures of the hydraulic main pumps. Teardown of the damaged pumps indicated that contaminated fluid was entering the pumps from the suction side and causing damage. Additionally, false contamination sensor alarms were instigating the replacement of components up to 75% short of the component's estimated life.



**Scoring present on main pump components caused by contaminated hydraulic fluid, prior to Mag-Shield Installation**

### The Solution

The fleet operator reached out to BAY6 Solutions to provide a Mag-Shield magnetic filter solution for their fleet. The customer installed Mag-Shields on one of several problematic excavators that was experiencing numerous repeat failures. Contamination returning to the hydraulic tank from any component failure is immediately captured and held by Mag-Shields preventing the spread throughout the system. Following repairs, residual contamination is captured and prevented from recirculating.



**BAY6 Solutions Mag-Shield filtration system installed in the main hydraulic tank of a Hitachi EX5600 excavator.**

## The Results

Following installation of the Mag-Shields, the frequency of contamination sensor alarms and contamination sensors requiring physical cleaning has been reduced by 75%. Contamination removal post failure will also be greatly improved. Engineering at the trial site reported the following: "Oil analysis results were inconclusive. As shown by the image (below) there was a consistent covering of extremely fine particles on all surfaces, there was also a significant build up on the edges of the screens in the lower flow areas. **It also shows that particles of the size caught by Mag-Shields are not accurately reflected in oil sample reports.**"



**Mag-Shield from hydraulic tank of EX5600 with long-term contamination problems.**

