

CAT 793D Off-Road Truck Guarded by MAG-SHIELDS®

The Problem

October 2019

A CAT 793D off-road truck being operated at an Australian mine site had a component failure within the brake hoist hydraulic system. This type of failure would release large amounts of ferrous material contamination into the hydraulic system, which could not be contained by the factory filtration system; factory filters would plug and enter bypass, allowing unfiltered fluid to circulate within the system. This would cause additional failures to the hydraulic system, specifically damaging the pumps. Following a failure, even the most effective flushing techniques cannot remove all residual contamination. The residual contamination continues to circulate within the system and cause follow-on damage.

The Solution

The operators equipped this truck with a BAY6 Solutions Mag-Shield kit following the failure in the brake hoist system. The intention was to prevent follow-on failures by capturing as much residual contamination as possible. The Mag-Shields installed in the reservoir cleaned the hydraulic fluid of abrasive ferrous particles before they could recirculate through the system. Because of the design of the Mag-Shield filter, all oil must pass through the Mag-Shields before returning to circulation.

The Results

Despite the initial failure, additional system-wide follow-on damage was prevented due to the Mag-Shields. A paste-like coating of ferrous metal shavings had accumulated on the Mag-Shields (image, right). Had the Mag-Shields not been in



**MAG-SHIELD® installed in a
793D showing residual
contamination after component
failure and flushing**

place these shavings would have circulated throughout the hydraulic system. According to site engineering **“If not for the Mag-Shields, we would have failed pumps again after the original contamination event when the Mag-Shields were installed.”** Additionally, post-failure machine cleanup is faster and more effective as the Mag-Shields can simply be removed, cleaned, and reinstalled. When combined with manufacturer recommended flushing procedures, contamination is removed more effectively and the likelihood of follow-on failures over the life of the machine is reduced. Mitigating future failures reduces downtime, improves machine reliability, and provides financial savings.