

FIELD INSTALLATION

Filtration and Contamination Control Specialists



Swing Box Filtration System

Centerra Gold – Kumtor Mine Kyrgyzstan Central Asia



Kumtor Mine contacted Equipment Placement to assist their efforts in reducing contamination in the swing box systems of their mixed shovel fleet. With the results that have been achieved on the same shovels with the hydraulic filtration units previously installed, the addition of the swing box filtration was an easy progression in the management of contamination control.

Equipment Placement provided a solution with the use of Filter Technology Australia on-board depth filtration units. Kumtor fitted the FTA units to the swing box assemblies on their Liebherr R9350 and Hitachi EX3600 shovel fleet. Live oil samples were taken before the filtration was added and then over a period of 48 hours.

The results have proven the effectiveness of the filtration units to a point that reduction in contamination levels have returned the oil back to cleanliness better than the new oil kept in bulk storage. The oil analysis shows that there has been a reduction of 99.9% in the 4 μ m range, 99.9% reduction in the 6 μ m range and a 99.9% reduction in the 14 μ m range.





The photographs show how easy the installation is to accomplish with minimal area required and with the added benefits of reduced contamination in the oil.

The life cycle of the swing box units should be increased. By using the industry accepted table supplied by the BHRA, the increased cleanliness of the oil indicates that if the standard is maintained then the swing boxes should gain at least fifty percent as many hours of operation than if the filtration had not been fitted. If the filtration is fitted when the swing boxes are fitted as new or refurbished, the life extension can be as much as double the usual service hours.

As the installation of the filtration draws from the bottom or service refill area of the swing box and then returns filtered oil back to the top of the box this gives a flushing motion and helps clean the contamination out of the box and also supply clean cooled oil to the upper areas of the box which is usually a high contaminate area.

This result will allow Kumtor to extend oil change intervals, which will have a direct impact on operational costs, with savings in oil, waste oil streams, reduced downtime, and maintenance costs and have a huge reduction in the mines environmental impact.

















Right Rear Swing Box

Fluid analysis showing marked reduction in contamination.



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