

## **Contamination Control on Hydraulic Oil Excavator Using an Off-Board Filtering System—Case Study(Book Chapter)**

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### **Abstract:**

This experiment to identify the contamination control with hydraulic oil used a 250 ton Hitachi hydraulic excavator, which is commonly used in coal mining operations. The aim is to analyze the effectiveness of an off-board filtering system to reduce the particles contaminant PC06 and PC14 in hydraulic oil. The experiment shows the additional flushing activity to clean the hydraulic oil using an off-board. The tool could reduce the particle contaminants in hydraulic oil compared to the normal operating condition. The hydraulic oil is generally filtered by a hydraulic system filter compartment attached to the system itself (on-board at the machine). The signal to noise ratio (SNR) value of the filter factor reaches an optimum when using the off-board with a  $4 \times 10 \mu\text{m}$  filter compared to the standard filtering by machine operation. At the time factor, it comes optimal at level 1 (Time 1000) so that the combination of filter and time can optimize the critical parameters PC06, PC14, and V100 in hydraulic oil. © 2022, The Author(s), under exclusive license to Springer Nature Switzerland AG.

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