Avoid costs and improve availability of mobile mining equipment with SKF Copperhead

Maximize Return on Investment (ROI)

In a mining operation, the cost to maintain mobile equipment can be as much as 70% of the total maintenance budget.

Contributing to this high cost is time-based maintenance, where equipment is taken out of service for inspection and maintenance whether it is needed or not. Time-based maintenance is expensive and not altogether reliable. The alternative to time-based maintenance is online predictive maintenance. Using online fault detection equipment, predictive maintenance can increase equipment availability an estimated 1 to 3%, which depending on the type of vehicle and mine, may be worth between 300 000 and 600 000 USD for each piece of equipment. For example, the cost of a catastrophic failure of a truck's final drive, can be as much as 200 000 USD more than if the fault were detected early.

Moreover, the increased equipment availability afforded by on-line fault detection can reduce the need to purchase additional vehicles to maintain production when other vehicles are out of service.

With a purchase price for a new truck in the range of 1,5 to 3 million USD, the savings and ROI offered by on-line, on-board fault detection systems and predictive

Applications

- Trucks
- Shovels
- Draglines
- Drills
- Loaders
- Miners

About SKF Copperhead for mobile equipment

Copperhead for mobile equipment is a rugged and compact on-board system that monitors the condition of mechanical systems while in operation and communicates the information to the people who need it as events occur. This eliminates the need to remove equipment from operation for time-based inspections, increases equipment availability, and detects faults so that scheduled repairs can be made before a catastrophic failure occurs. With the increasing use of wireless networks within the mining industry, the on-line monitoring capabilities afforded by Copperhead offers a significant advantage.

Copperhead combines a robust on-line monitoring system, with rugged vibration and temperature sensors, and easy-to-use analysis software. Developed specifically for offroad vehicles that operate in extreme ambient conditions, the system monitors vibration, temperature, speed and other specific parameters. The software incorporates specialized monitoring techniques to capture vibration signals under varying speed and load conditions.

Features

- Rugged, compact on-board, on-line condition monitoring system for predictive maintenance
- 16 analogue inputs, 2 digital inputs, and 4 digital outputs per modular system
- User-friendly software with automatic alarm and conditional “gating” capability
- Wireless network and other communication compatibilities
- Optional web-based communication for system and data access

Robust monitoring software

- Conditional “gating” of parameters
- Process and hierarchical views
- Multiple numbers of vehicles can be monitored simultaneously
- SMS, email and web remote monitoring optional
- Interface with Decision Support and
- Computerized Maintenance Management
- Systems (CMMS)

Onboard on–line condition monitoring

- Vibration, temperature, speed, load
- Rugged hardware for mobile equipment
- Communicates with common wireless systems
- Relay drivers for relay contacts
- 7 MB onboard data storage
- Data can be periodically downloaded

Mobile equipment monitoring

- Trucks, miners, loaders: final drives, differentials, transmission, cardan shaft
- Shovels: hoists, crowd, swing, propel mechanisms
- Draglines: hoist, drag, swing mechanisms
- Drills: drillhead
- Auxiliaries: motors, pumps, fans, blowers, compressors, hydraulic systems

Benefits

- Avoids unnecessary costs
- Reduces maintenance costs
- Increases vehicle availability
- Increases productivity
- Reduces fleet size

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