EARLY INTERVENTION WITH THE ONTRAK WIRELESS: EXCESSIVE GREASE CONSUMPTION IN HIGH-HEAT MANUFACTURING ENVIRONMENTS

In a high-heat, hard-to-access manufacturing environment, a well-known company struggled to maintain the health of its pillow block overhung fan bearings. These bearings, vital to their operation, faced extreme conditions where time-based auto lubricators frequently failed, leading to over-lubrication, under-lubrication, and increased bearing failures.

The company's reliance on time-based lubrication, which lacked real-time data, ultimately resulted in costly, unplanned downtimes. To restore their operations to peak performance, the primary challenge was upgrading from using time-based auto lubricators to condition-based auto lubricators to accurately determine when and how much grease the bearings needed to prevent failure.

CONDITION-BASED LUBRICATION WITH THE ONTRAK WIRELESS FOR REAL-TIME MONITORING

UE System's **OnTrak Wireless** enabled the company to shift to a **condition-based lubrication approach**. Using advanced ultrasound technology, the OnTrak Wireless system continuously monitored the friction levels and lubrication needs of the bearings, allowing the company to determine precisely when lubrication was required and dispense the correct amount of grease. This upgrade helped prevent failures associated with outdated time-based systems.

UE SYSTEMS INC. - 14 Hayes St., Elmsford, New York, USA 10523
+1 914 592 1220 info@uesystems.com www.uesystems.com

GREASE CONSUMPTION AS A KEY INDICATOR IN EXHAUST FAN BEARINGS

Consider the example of an exhaust fan's drive-end and non-drive-end bearings monitored by the OnTrak Wireless system. In the first 30 days of operation, the system flagged significant differences in grease consumption between the two bearings:

Drive-End Bearing (Figure 1A): Consumed just 2 cc of grease over the month.

Non-Drive-End Bearing (Figure 1B): Consumed a concerning 22 cc of grease during the same period.

While some variation in grease consumption is normal, this level of disparity was a red flag. The system's data showed that the non-drive-end bearing was struggling, consuming far more grease than expected to maintain its friction levels.

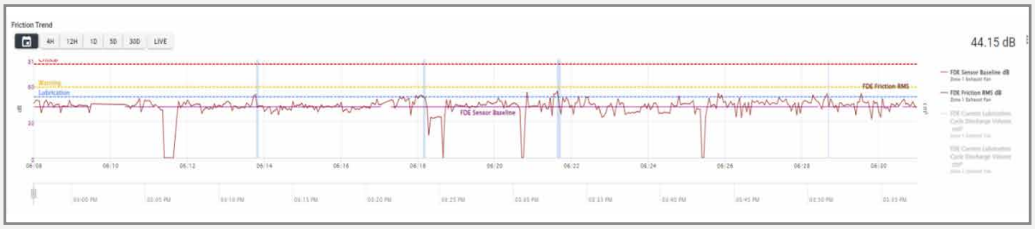

Figure 1A - Exhaust Fan Drive End Bearing Friction (Ultrasound) Trend. The blue vertical bars indicate lubrication events, showcasing how friction levels fluctuate in response to each lubrication instance.

Figure 1B - Exhaust Fan Non-Drive End Bearing Friction (Ultrasound) Trend. The blue vertical bars indicate lubrication events, showcasing how friction levels fluctuate in response to each lubrication instance.

INVESTIGATION AND DIAGNOSIS

Upon further investigation, the maintenance team discovered that the recently replaced non-drive-end bearing had developed looseness. Traditional vibration analysis had not triggered any alarms, but ultrasound technology detected subtle signals at 1x RPM, indicating early signs of bearing wear. These minor signals, combined with the excessive grease consumption, confirmed that there was a developing issue.

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The OnTrak Wireless system's autonomous tracking of lubrication needs, combined with grease consumption data and friction trends, enabled the maintenance team to identify and address the issue before it escalated into a full-blown failure. By catching the issue early, they avoided costly downtime and reduced repair expenses.

CONCLUSION: GREASE CONSUMPTION AS AN EARLY INDICATOR

This case highlights the powerful benefits of upgrading from time-based to condition-based lubrication and how grease consumption can serve as a critical early indicator of bearing failure, especially when combined with other condition monitoring data like ultrasound. With the OnTrak Wireless system, the company transformed its maintenance strategy from reactive to proactive, reducing grease waste and successfully preventing significant downtime in a challenging high-heat environment. This shift not only enhanced equipment reliability, but it also improved efficiency across the board.

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