

AVOIDING IN-SERVICE FAILURE THROUGH OIL ANALYSIS



Routine Lubrication Monitoring Prevents Gearbox Damage in Grain Processing

AVT Reliability® supports this major UK food and beverage manufacturer in achieving a more predictable and reliable plant operation through best practice lubrication techniques, including regular greasing, scheduled oil analysis, and proactive recommendations for oil changes and lubricant selection.

THE CHALLENGE

The affected asset is a cooker mixer, responsible for agitating grain during the cooking process. If this equipment were to fail, the grain would bind and stick inside the vessel, requiring the cooker to be taken offline.

Remedial cleaning involves specialist confined space entry and extended downtime, leading to substantial maintenance costs and loss of production.

OUR APPROACH

AVT Reliability® has delivered a full on-site lubrication service for this facility for more than two years. Services include greasing, oil sampling and analysis, and oil change support.

Due to the asset's production-critical role, the cooker mixer was added to AVT's regular oil analysis programme.

Oil samples are collected every six weeks and analysed for wear metals, additive depletion, and contamination.

Findings are reviewed and interpreted by AVT's lubrication specialists, with results and recommendations shared directly with site engineering.

OUR FINDINGS

As part of AVT's routine oil sampling schedule, laboratory analysis detected rising iron levels over successive six-week sampling intervals.

This prompted an internal inspection of the gearbox, which revealed chipped, worn, and broken gear teeth. The root cause was traced to a damaged non-drive end (NDE) footstep bearing that had introduced eccentric shaft movement, causing internal gear misalignment and impact.

Interestingly, vibration analysis data had not shown abnormalities, oil analysis provided the earliest and most accurate warning of internal damage.

THE SOLUTION

AVT's findings were reported to site management. The faulty gearbox was removed and replaced, and the damaged unit sent for refurbishment.

The NDE footstep bearing is scheduled for inspection and, if needed, replacement during the next planned site shutdown.

The newly installed gearbox has been added to the existing oil analysis schedule to ensure performance is closely monitored and any further signs of wear are caught early.

FOLLOW UP

Without regular oil sampling, this defect would not have been identified until the gearbox failed unexpectedly.

This would have caused significant disruption, emergency repair costs, and a costly confined space clean-up.

Thanks to AVT's proactive intervention, the customer avoided an in-service failure and prevented unplanned costs in excess of £15,000.

Need help?

Contact our experts

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LUBRICANT ANALYSIS SERVICES

- Routine oil analysis ensures lubricant quality and functionality while revealing insights into machine condition.
- Laboratory testing identifies particulate contaminants and wear debris before they cause costly failures.
- Regular testing throughout equipment life provides trending data to predict maintenance needs.
- Analysis applies not only to oil, but also grease, fuel, coolants, and heat transfer fluids.

[Find out more here](#)

“ ***If this unit had not been on regular oil testing, we never would have known until it was too late. Regular oil testing gives us good insight into our machine's health.*** ”

