VIBRATION ANALYSIS IDENTIFIES BEARING WEAR BEFORE PRODUCTION IS IMPACTED

AVT Reliability® supports this major UK beverage manufacturer in building a more reliable and predictable plant operation through condition-based maintenance, enabled by Machine Sentry®. In this case, early detection of bearing wear prevented a costly and disruptive compressor failure.

THE CHALLENGE

Compressed air plays a vital role across bottling lines, powering key equipment and processes, including product transfer and cleaning operations. Compressor reliability is essential to maintaining plant throughput. A failure in any part of the compressed air system can lead to line disruption, manual intervention, or temporary shutdowns while capacity is restored via backup systems.



OUR APPROACH

AVT Reliability® provides monthly on-site condition monitoring services at this facility. Data is collected using Machine Sentry® Fixed (MSF) sensors and mobile vibration analysis tools operated by AVT engineers.

All data is uploaded to the Machine Sentry® platform for review and analysis. When abnormal readings are identified, action notes and reliability reports are issued, giving the client clear, data-led recommendations for corrective maintenance.

OUR FINDINGS

During routine condition monitoring, AVT engineers detected a stepped increase in vibration levels on a key air compressor motor. Spectral analysis revealed a raised carpet level and several non-synchronous peaks, classic indicators of bearing wear or defect.

Based on this change, AVT raised an Action Note within Machine Sentry®, advising that the motor bearings be replaced at the earliest opportunity to prevent in-service failure.

> ***"This is exactly why we value condition-based monitoring. The bearings were changed before failure, saving time, cost, and potential production loss."***

THE SOLUTION

An Action Note was issued on 28 February 2022 recommending replacement of the motor bearings. By AVT's next visit on 26 July 2022, the work had been completed by the on-site maintenance team.

Prior to repair, impact acceleration levels were recorded at over 1.3 g(i).

Following bearing replacement, levels dropped to a stable and satisfactory 0.3 g(i), confirming the success of the intervention and return to normal operating condition.

FOLLOW UP

Had this fault gone undetected, the motor bearings would likely have failed, causing the compressor to shut down unexpectedly.

This would have resulted in production disruption, placed additional strain on other compressors, and potentially caused secondary motor damage, greatly increasing repair costs.

Thanks to early diagnosis and timely repair, costly downtime was avoided. AVT were not involved in the mechanical work, but post-repair data confirmed the issue was resolved.

AT A GLANCE

INDUSTRY: Beverage Production
PROCESS: Bottling Hall
EQUIPMENT: Air compressor (motor driven)
PRODUCTS: Machine Sentry® sensors
SERVICES: Condition monitoring, vibration data analysis, diagnostics

Need help?
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