



VIBRATION ANALYSIS IDENTIFIES BEARING FLUTING ON DECANter BACK DRIVE MOTOR

AVT Reliability conducts routine vibration analysis across the distillery and animal feed plant to identify developing mechanical faults, support safe operation and improve the long-term reliability of critical rotating equipment.

THE PROBLEM

The decanter separates solids from liquid during the processing of distillation by-products, helping convert thin stillage into a valuable animal feed product.

An unexpected failure could interrupt production, reduce throughput and potentially force the plant to stop while repairs are carried out

Keeping the decanter operating reliably is essential to maintaining production efficiency and avoiding costly unplanned downtime.

OUR APPROACH

AVT Reliability visits the site every two weeks, surveying each area monthly using Machine Sentry® mobile vibration monitoring.

Engineers assess rotating assets for developing faults, with data analysed and reviewed alongside the site team.

Any issues are reported with clear recommendations, allowing maintenance to be planned before failure occurs.

OUR FINDINGS

Routine trend data showed excessive vibration from the decanter back drive motor, with high-frequency peaks indicating developing bearing damage.

Elevated temperatures around the bearings supported the diagnosis, and AVT Reliability recommended bearing replacement.

Inspection confirmed raceway wear and fluting on the drive-end outer race, consistent with electrical current passing through the bearing.

OUR SOLUTION

The site engineering team replaced the damaged motor bearings with insulated bearings selected to reduce the risk of further electrically induced damage.

Following the repair, the motor's overall vibration reduced significantly and the bearing temperature, particularly at the drive end, returned to a much cooler level.

Further vibration analysis confirmed that the high-frequency peaks associated with the defect had disappeared or reduced to a much lower amplitude. Subsequent routine surveys have continued to confirm that the motor is operating effectively and the original fault has been resolved.

AT A GLANCE

Location:	Edinburgh, Scotland
Industry:	Whisky distilling and animal feed production
Process:	Separation of distillation by-products for animal feed production
Equipment:	Decanter A18 back drive motor
Product:	Machine Sentry® mobile
Service:	Routine vibration analysis and condition monitoring
Fault Identified:	Bearing wear and electrically induced fluting
Outcome:	Bearings replaced before failure, with vibration and temperature returned to acceptable levels

FOLLOW UP

By identifying the defect through routine condition monitoring, AVT Reliability enabled the site to replace the bearings before the motor failed in service.

A failure could have significantly disrupted animal feed production, caused wider process downtime and introduced additional repair, financial and safety risks.

Continued vibration monitoring will help the site confirm the ongoing condition of the repaired motor and identify any future deterioration at an early stage.

