

THE PROBLEM:

Whether you have a vertically mounted agitator coupled to a gearbox, or an agitator mounted to the side of vessel coupled to a 90° gearbox: the general nature of Agitator processes is usually sporadic, and the gearbox can experience backlash resulting in added stress on the mounting brackets and coupling. If continuous monitoring is not implemented, reliability programs can lose valuable insight into machine health and miss costly, abrupt failures resulting in significant equipment costs, man-hours, and lost throughput.



Figure 1: A sheared drive shaft due to abrupt operating condition changes saved before further equipment damage was done.

The Importance of Vibration Monitoring on Agitators:



Continuously monitor your equipment's vibration patterns in real time to allow for machine health insights and correlate with potential unexpected process occurrences



Optimize manhours and mitigate safety risk by eliminating route-based maintenance – get actionable data at fast as every 12 seconds (10-minute recommended standard).

Cost of Asset Failures

Up to **\$150,000** in potential **Equipment Rebuild or Replacement Costs** for traditional vessels.

2 Riggers & 2 Machine Repairmen on average spending 6-8 hours, if properly prepped, can result in over **32 Individual Man Hours**, minimum.

Depending on redundancies & product, lost product could result in upwards of **\$10,000 - \$15,000 per Hour**.

A NEW APPROACH TO AGITATOR MONITORING

Past:

Once a blade falls off, a severe imbalance is introduced to the system which is normally when Operations gets a notice. By the time the notice is acknowledged and acted upon permanent damage to the vessel, blades, shaft, gearbox and motor is likely already done.

Present:

Continuous monitoring achieves an earlier sign of looseness preventing any further shaft (bends or nicks), gear (damaged/cracked teeth), or seal damage and/or failure due to excessive vibration on the shaft.

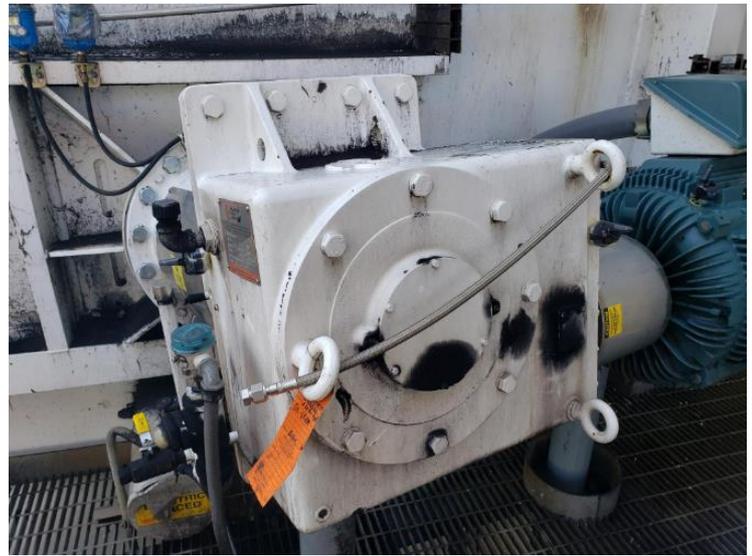


Figure 2: A Gypsum Agitator in the field with KCF Technologies' V3 Vibration Sensors Installed



HARDWARE

- 4 Vibration sensors covering 2 Radial directions on the Motor Outboard Bearing, 1 Radial & 1 Axial on the Motor Inboard Bearing, 1 Axial (Motor Shaft) & 1 Radial on the Gearbox Input Bearing, 1 Axial (Agitator Shaft) & 1 Radial on the Gearbox Output Bearing
- Additional Oil Quality Sensors for the Gearbox if desired



SOFTWARE

- Dashboards provide an Overview of All Agitator Health on One Screen
- Gearbox Frequencies Banded & Alarmed On with SMARTdiagnostics Capabilities
- Automated Alarms or Set Custom Thresholds



REAL-TIME DATA

- Run Speed
- Product Tank Levels
- Oil Quality
- Acceleration Bands
- Velocity Bands
- Various Other Vibration Indicators



TRAINING

- Sentry
 - Site visits: Once upon install & then as requested by site personnel
 - In-person training
- KCF Academy Software & Hardware Overview
- Remote Live Analysis Walk-Through & Pattern Documentation

CONTACT US!

Call **814-867-4097** or email sales@kcftech.com for information.

