CASE STUDY

wisper

Wisper CMS/ Wisper On-premises Case Study

A Silicon Manufacturer




- Over 2.5 years of operation, the **Wisper CMS** has transformed maintenance practices at the silicon manufacturing site.
- By **preventing 32 potential equipment failures**, customer has **avoided AUD 1.65 million in potential losses** and **eliminated unplanned production downtime**.
- Maintenance costs have been **reduced by AUD 650k (AUD 22k per month)—twice the initial investment**—while giving maintenance teams 24/7 visibility and confidence in equipment health.

Case Background

- The customer is a leading global silicone producer. In their high-volume, continuous manufacturing environments, equipment reliability is essential to ensure production efficiency and product quality.
- Before adopting the Wisper CMS, the plant relied on manual, engineer-led inspections as part of its preventive maintenance process. However, this approach could not detect early-stage equipment faults and produced inconsistent data across inspection intervals.
- As a result, the maintenance team faced a higher risk of unexpected equipment failures, which could trigger costly unplanned shutdowns and economic losses if minor issues went undetected between scheduled checks.

Wisper Deployment

304 measurement points in total have been deployed for this customer.

This case study will focus on the monitoring of **Compressor #1**, on which 7 measurement and monitoring points are deployed at critical components, including the motor drive end, piston face, crosshead slideway, and crankcase, comprehensively capturing operational data to establish a precise foundation for fault prediction.

A picture of the Compressor #1

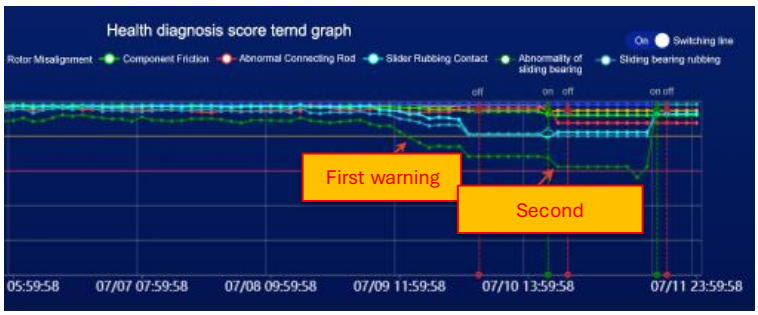
Fault Detection and Correction Verification

9th July 2024
First Warning: Initial Detection

On the 9th of July 2024, the Wisper CMS **detected loosening of the sliding bearing at the free end of the crankcase**, **abnormality at connecting rod, and a declining peak optimization index**. The system immediately generated a diagnostic report, clearly indicating the likely failure points as well as potential failure risks, and sent the alert to the maintenance team with a recommendation for close monitoring.

10th July 2024
Second Warning: Risk Escalating

By 10th July 2024, the relevant indicators continued deteriorating and breached the alarm threshold. The system issued another urgent notification, highlighting a **high probability of sliding bearing loosening at the crankcase free end**.



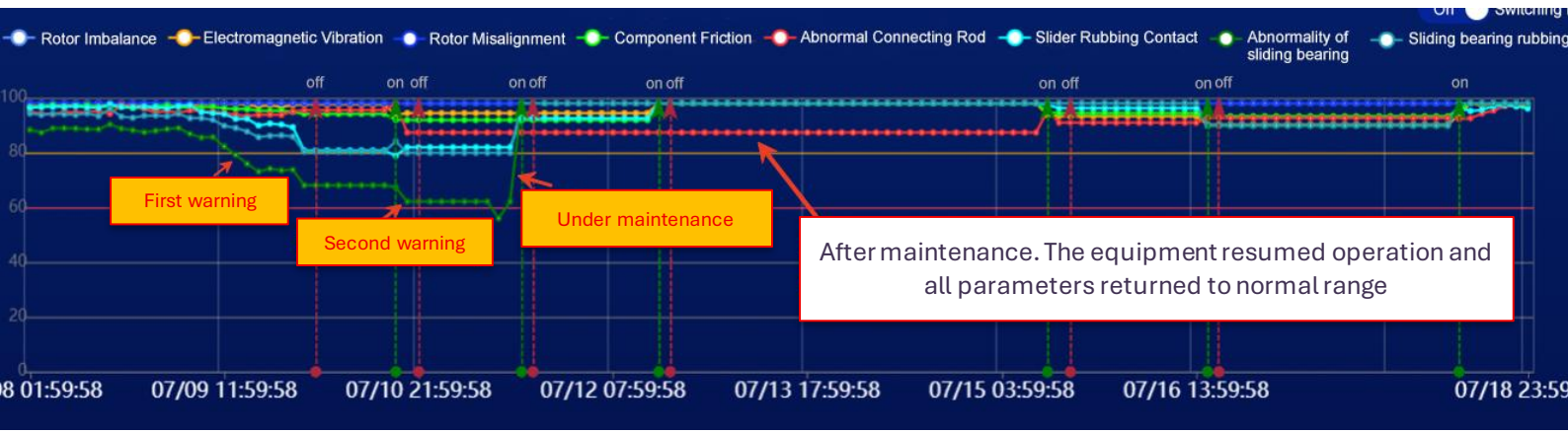
Product health score trend with first and second warnings

Maintenance response

Upon receiving the alerts, the on-site maintenance team promptly scheduled a shutdown for inspection, aligning with production plans. Disassembly confirmed loosening of the crankcase bearing bush at the free-end, which precisely matches the diagnostic report from Wisper CMS. The maintenance team replaced the bearing bush and performed realignment, restoring the core components to optimal condition.

Post-Repair Verification

After maintenance, the equipment resumed operation with real-time monitoring showing all parameters returning to normal ranges and stable performance as shown below



Product health trend chart shows the compressors operating normally after repair

Conclusion

Highlights of the total outcomes for the customer in 2.5 years:

- **Prevented 32 potential equipment failures**, reducing economic losses by **AUD 1.65 million** and avoiding unplanned **production downtime**.
- Over **2.5 years of operation**, the system has reduced maintenance costs by **AUD 650K (AUD 22K per month) – twice the initial investment**.

17

Pieces of equipment

132

Monitoring points

32

Potential downtimes turned into planned maintenance

1.65 million

Reducing economic losses

♠ **Compressors** are fundamental to process industries that require the movement, pressurization, or circulation of gases. They are critical throughout the **oil and gas** sector for enhanced **recovery**, **pipeline** transmission, and **refining**. The **chemical industry** relies on them to produce ammonia, plastics, and polymers, while **power generation** uses them in gas turbines and auxiliary systems. In regulated sectors like **pharmaceuticals** and **food & beverage**, compressors provide sterile air for fermentation and carbonation, ensuring product purity and safety. Their applications extend to **mining** for pneumatic tools, **pulp and paper** production for conveying, air separation for industrial gases, and **wastewater treatment** for aeration. From high-flow centrifugal to high-pressure reciprocating types, compressors are indispensable engines that enable a vast array of essential industrial operations and manufacturing processes worldwide.

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Feel free to contact us for a live demo – Email: info@infinode.io