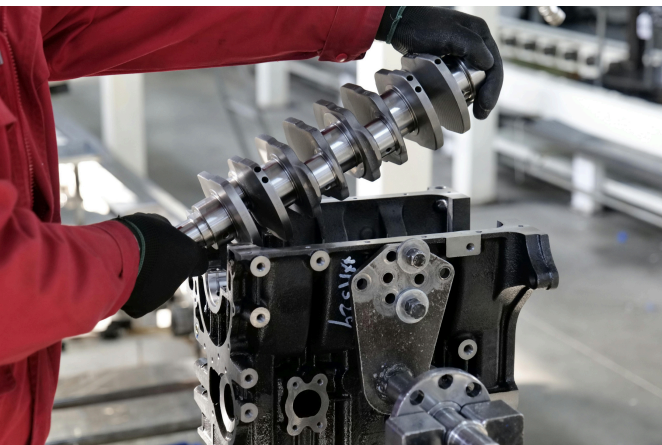


Predictive Maintenance for Critical Rotating Equipment

Wireless Vibration Monitoring + AI-Driven Rotating Machinery Diagnostics



Your Rotating Equipment Is Critical to Production

Motors, pumps, blowers, compressors, fans, and gearboxes run continuously. When one fails unexpectedly:

- ✓ Production stops immediately
- ✓ Spare parts become urgent and costly
- ✓ Maintenance response turns reactive
- ✓ Safety and product quality may be compromised

Traditional maintenance approaches struggle:



Reactive (repair after failure)

Causes unplanned downtime
& high recovery cost



Scheduled (fixed interval service)

Leads to over-
maintenance & wasted
budget

FACTORIES TODAY NEED:

Maintenance based on **actual equipment condition**, not assumptions.

CTI's Predictive Maintenance Solution



Our solution continuously monitors rotating machinery health using:

- AISSENS Wireless Vibration & Temperature Sensors
- AI-Driven Rotating Machinery Diagnostic & Trending Platform (RM-IoT / PHM)

Together, they enable **early fault detection** and **predictive maintenance planning** — **before breakdowns occur**.

AISSENS Sensor Layer (Data Acquisition)

Wireless Sensing Designed for Industrial Environments

The AISSENS device captures vibration signatures and thermal stress conditions to identify mechanical faults early.

Key Capabilities:

- High-resolution 6 kHz tri-axial vibration measurement
- Wireless connectivity (no cabling required)
- Up to 2-year battery life for true remote monitoring
- IP68 construction for dusty, oily, wet environments
- Magnetic or stud mounting for quick installation
- (no machine shutdown needed)

Monitors:



Bearings



Compressors



Motors



Gearboxes



Pumps



Blowers



Fans



Conveyors

Diagnostics & Prediction Layer (RM-IoT / PHM)

AI-Driven Rotating Machinery Diagnostics

The platform analyzes real-time vibration signatures to determine equipment condition and forecast degradation trends.

Core Functions

- ISO-based machine health scoring
- Spectrum (FFT) and waveform signal analysis
- Early anomaly detection and severity classification
- Trending to show how fast degradation is progressing
- Predictive estimation of failure timing or intervention window

This enables maintenance to take action **at the right time**, not too early, not too late.

What Issues the System Detects

Allows maintenance to intervene weeks to months earlier.

Failure Mode	Early Signature Indicators	Operational Impact Avoided
Bearing Wear	High-frequency vibration rise	Bearing seizure & shaft scoring
Misalignment	Axial vibration imbalance	Seal wear, coupling damage
Gearbox Mesh Faults	Harmonic frequency distortion	Gear tooth failure & metal contamination
Imbalance	Radial vibration elevation	Energy loss, overheating, resonance
Thermal Stress	Gradual temperature creep	Insulation breakdown & motor burnout

From Reactive → To Predictive → To Optimized Reliability

- Avoid unplanned shutdowns
- Reduce emergency repair and spare part cost
- Extend equipment operating life
- Reduce manual inspection time
- Improve safety in elevated/hazardous zones
- Stabilize production continuity

Reliability stops being luck — it becomes engineered.

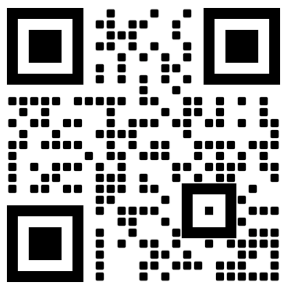
CTI Delivers the System, Not Just Components

We ensure the entire ecosystem is engineered, configured, and supported to work **end-to-end** in your plant.

CTI Service Scope	Customer Outcome
Equipment criticality study & mounting strategy	You monitor the assets that matter most
Network + system configuration	Smooth & reliable data flow
Alarm thresholds & baseline model setup	Alerts that are meaningful, not noisy
Data interpretation & maintenance advisory	Maintenance teams act with confidence
Ongoing optimization & lifecycle support	System accuracy improves over time

Start with a Machine Health Assessment

AI-Driven Rotating Machinery Diagnostics



CLICK HERE

