



ATTEN2
Advanced Monitoring Technologies

**Online oil condition monitoring
solutions for critical equipment**

INDUSTRIAL PROCESSES

**REDUCE YOUR MAINTENANCE COSTS
BY IMPROVING MACHINE RELIABILITY**





ATTEN2
Advanced Monitoring Technologies



ONLINE LUBE OIL CONDITION MONITORING SOLUTIONS

THE BEST PARTNER FOR SMART MAINTENANCE PROFESSIONALS

- ▶ Customized solutions with optical technology for lube oil and critical machinery monitoring
- ▶ Digital, precise, easy & real-time information for decision making



- **30%**

Reduce machinery maintenance

+ **20% - 60%**

Extend equipment lifecycle

+ **30% - 70%**

Extend the lube oil lifecycle



ATTEN2 TECHNOLOGY

At **Atten2** we provide technological solutions and engineering services focused on reducing our clients' operational risk and monitoring their critical assets.

Our technology is based on optical sensors that allow the measurement of the condition of various fluids, especially lubricating oils, which allow us to know the **wear behavior** of the machines, by **particle counting** and **shape recognition** for **root cause analysis** and the **degradation** and **moisture** status of the fluids we monitor.

Our goal is to bring tangible value to our customers.



IMPACT ON YOUR MAINTENANCE COST ANTICIPATING FAILURE 7 TIMES BEFORE ANY OTHER TECHNOLOGY

HOW?



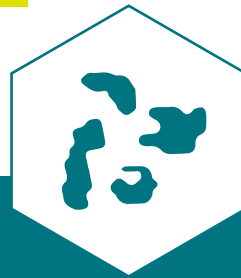
Counter Series

Particle counting and size classification (ISO/NAS) and bubble counting/discrimination for early pre-failure detection and filtration efficiency.



Degradation Series

Oil degradation and varnish detection to extend lube oil life and assure optimal lubrication performance.



Shape Series

Wear root cause analysis through particle morphology and digital imaging.



Moisture Series

Water contamination detection to avoid machine corrosion and extend lube oil life.

EASY INTEGRATION AND CONNECTIVITY



Online **PROBE**



Online **BYPASS**



Portable



Wireless to cloud



Net



CMS / PLC / SCADA



Data base



Control center



Visual Interface



Spot measurement

INDUSTRIAL PROCESSES

Reduces mechanical failures in gearboxes and air compressors by more than 50% by optimizing lubricant consumption. It measures operational risk in critical assets to obtain a significant reduction in catastrophic failures.



Gearboxes



- ▶ Monitor the condition of the critical gearboxes
- ▶ Efficiently diagnose faults such as: fatigue, lack of lubrication, impact and corrosion
- ▶ Optimize lubricant changes in critical gearboxes

Hydraulic systems



- ▶ Precisely diagnose problems of particle contamination in the hydraulic systems
- ▶ Significantly reduce control valve failures
- ▶ Optimize hydraulic oil lifespan by continuously monitor its condition
- ▶ Improve filtration systems with fluid condition monitoring

Gas turbines

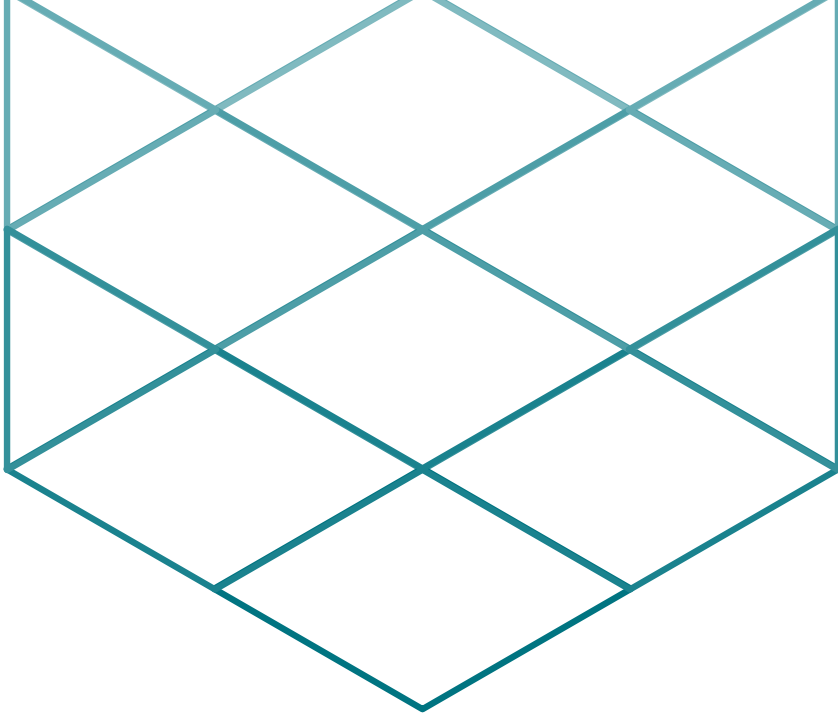


- ▶ Monitor information on turbine bearing wear patterns
- ▶ Enable monitoring of the risk of varnish generation
- ▶ Enable monitoring of generator bearing life
- ▶ Control the quality of new lubricant before supplying it to the turbine
- ▶ Thoroughly monitor the life cycle of the lubricant and optimize changes without compromising the effectiveness of the lubrication system

Compressors



- ▶ Significantly reduce lubricant changing costs through continuous monitoring
- ▶ Accurately monitor compressor wear pattern
- ▶ Reduce failure incidences on positive displacement compressors
- ▶ Measure the impact of compressor operation on the condition of the machine



ATTEN2
Advanced Monitoring Technologies

Calle Iñaki Goenaga 5
20600 Eibar · Gipuzkoa
SPAIN

Tel.: +34 943 155 150
info@atten2.com

www.atten2.com