OilWear

SMART SOLUTION BY ATTEN2

ONLINE OIL SENSORS
FOR MACHINE
CONDITION MONITORING

ATTEN2
Advanced Monitoring Technologies

OILWEAR® IS A SUITE OF ONLINE OIL MONITORING SENSOR.

They are based on patented digital image processing technology.

PRODUCT RANGE

We offer a wide range of sensors to adapt to your specific needs.

PARTICLE COUNTING > 14µ

PARTICLE COUNTING > 4µ

4406 ISO CLEANLINESS CODE

PARTICLE COUNTING > 4µ

4406 ISO CLEANLINESS CODE

Shape analysis to obtain root cause (>20µ)

OilWear®120 sensors (P120, C120 and S120) have the same features as OilWear®100 (P100, C100 and S100) sensors, **with the incorporation of OilHealth® technology**.

Oilwear®120 series allows to measure lubricating oil degradation. The continued monitoring enables to **optimize the oil changes, thus leading to significant economic, environmental and operating benefits**.

MODULARITY

The OilWear® sensor has a modular design, whereby the measuring module, can be easily integrated into your SCADA or condition monitoring System.

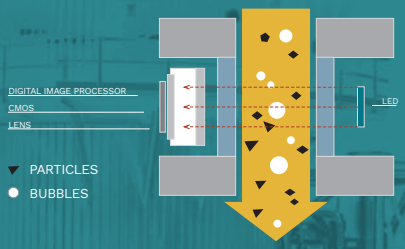
APPLICATIONS

- Rotating Machinery
- Engines
- Hydraulic Systems
- Lubrication Equipment
- Hydraulic, Cutting and Cooling Fluids
- Minerals oils, Synthetic oils and Glycol
- Aqueous Solutions
- Fuels

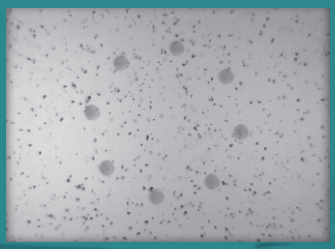
SENSOR TECHNOLOGY

All OilWear® sensors are based on optical technology:

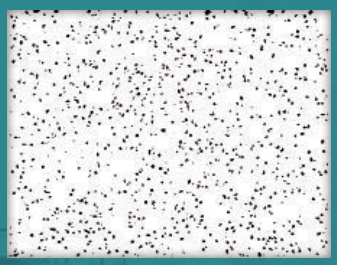
1 Measuring principal:
1. Self calibration
2. Self light compensation



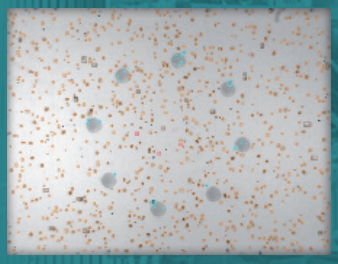
2 Image adquisition and processing.



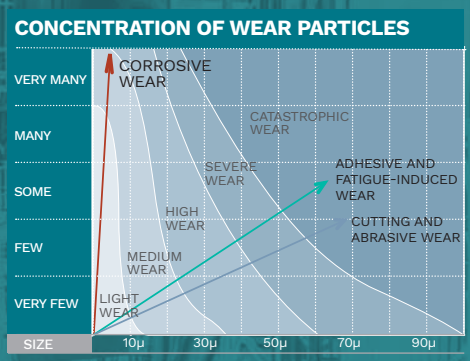
3 The images are binarized.



4 Particle identification:
1. Classification by size
2. Classification by shape
3. Distinction between particles and bubbles



5 Knowing the size and number of particles, it is possible to determine the type and severity of wear failure.

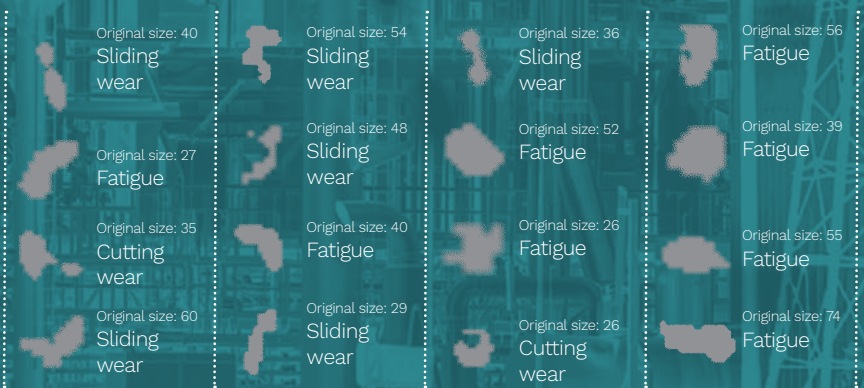


6 OilWear® C100, C120 and OilWear® S100, S120 obtain the cleanliness codes: ISO 4406, NAS 1638, SAE AS4059 or equivalent.

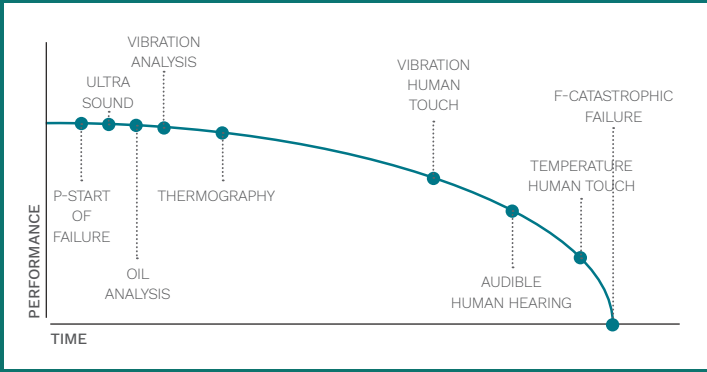
NUMBER OF PARTICLES PER ML
>4µ: 27832
>6µ: 12571
>14µ: 3683
22/21/19 ISO CODE

MORE THAN (PART/ml)	UP TO (INCL.) (PART/ml)	ISO CODE
80.000	160.000	24
40.000	80.000	23
20.000	40.000	22
10.000	20.000	21
5.000	10.000	20
2.500	5.000	19
1.300	2.500	18
640	1.300	17
320	640	16
160	320	15
80	160	14
40	80	13
20	40	12
10	20	11

7 OilWear® S100 and S120 determine the origin of particles according to their size and shape for particles larger than 20µ, providing information on the failure root cause that is creating the wear particles.



P-F DIAGRAM



BENEFITS

The analysis of the wear particles contained in the oil is the best source of information to diagnose the condition of the equipment in a very early stage.

This information allows to work with a maintenance strategy based on condition, with the following benefits:

- It provides timely information about the machine condition, allowing corrective actions to be taken in the early stages.
- Avoiding unnecessary maintenance actions
- It increases the operating time, output and availability of the machine being monitored.
- It reduces the risk of faults, and repair costs.
- It provides rapid, reliable information on the service lifetime and contamination of the fluids.

ADDED VALUE

- Make savings, reducing in at least 40% the unplanned shutdown due to equipment failures.
- Reduce in a half the cost of lubricant in your critical machinery.
- Extend the life of the machinery in at least 30% optimizing the oil cleanliness and filtering strategy.
- Diagnose the equipment condition with comprehensible on the fly data.
- Get ahead of events, setting dynamics alarm levels and alerts, depending on the operational conditions.
- Make better decisions, knowing in a very early stage the drivers that produce wear and failure.
- Work with a low-cost solution, easy to use and integrate.

EASY TO INSTALL

Hydraulic conexion: by-pass

Sensor inlet: Sampling point

Sensor outlet: Sump

EASY TO INTEGRATE

Communication options:

Digital outputs: ModBUS RTU (RS485)

ModBUS TCP (Ethernet)

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