

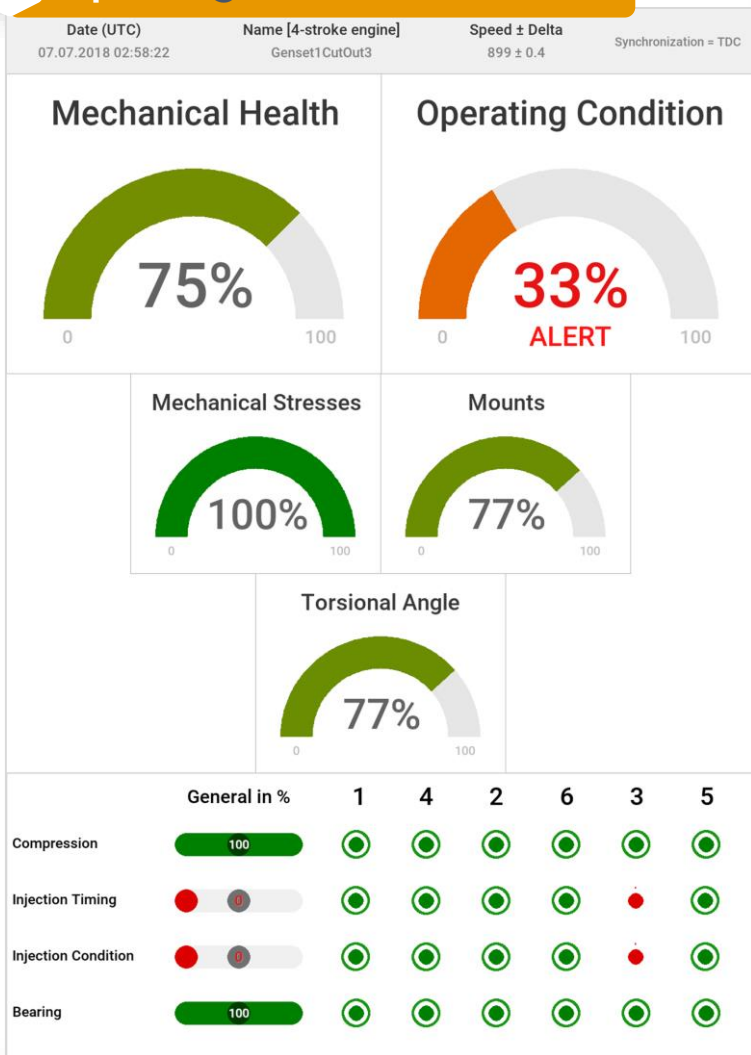
alphasystem

The intelligent health check for your entire power train!

alphasystem is a revolutionary predictive diagnostic system for the entire power train. It includes the diagnosis of all kinds of combustion engines and bearings, and it can be used to measure the torque of a shaft. It helps to strike and maintain a perfect balance between operating and maintenance costs.

- **alphaengine** to diagnose 2-stroke and 4 stroke engines and turbochargers
- **alphatorque** to measure dynamic and static torque of a shaft
- **alphabearing** to diagnose all bearings on power train





Example of an engine diagnostic report

Non-cylinder specific indicators



Mechanical Health is the overall indication of the mechanical condition of the engine.



Operating Condition indicates how efficiently the engine is running.



Mechanical Stresses informs about the presence of unexpected stress pulses in the crankshaft twist.



Mounts indicates engine imbalance due to non-optimal thermal health and inertial resistance of moving parts.



Torsional Angle informs about dynamic torsion in the crankshaft.

Cylinder specific indicators



Compression compares cylinder pressures and indicates power loss or efficiency of the engine.



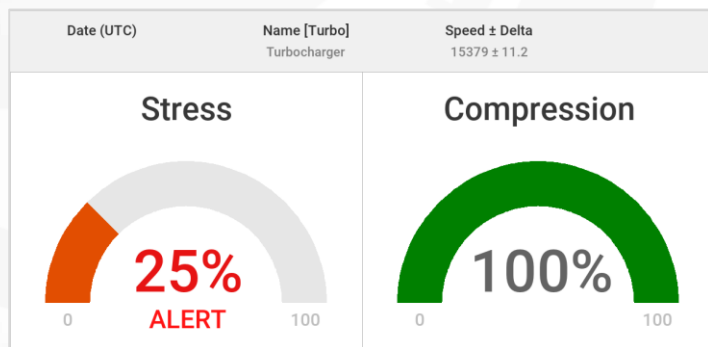
Injection gives an information about injection timing and fuel atomization.



Bearing indicates dynamic behavior of bearings and all moving parts.



With a turbocharger blade passing speed sensor, the turbo's efficiency and mechanical health can be determined by two indicators. Compression informs about speed variations due to bearing friction giving a feedback about efficiency of turbine, compressor and rotor shaft. Stress indicates presence of mechanical shock pulses during operation indicating a mechanical damage of turbine, compressor or rotor shaft.



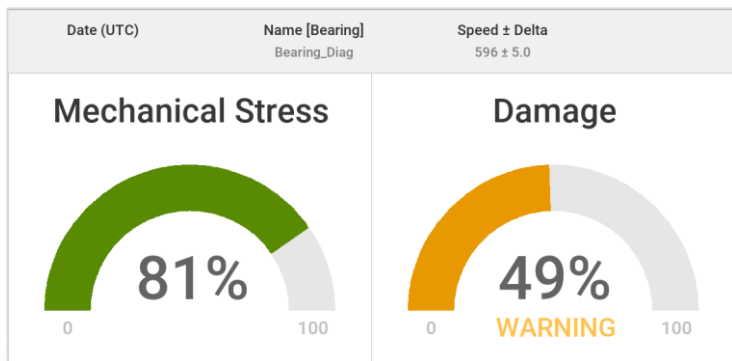
Example of a turbocharger diagnostic report

Product Features

- Inline and V-type
- 2 or 4 stroke engines
- Up to 30 cylinders
- Diesel, natural gas, gasoline, or heavy furnace oil engines
- Independent of engine manufacturer
- One speed sensor gives information about overall operating condition
- Second speed sensor enables cylinder specific diagnosis
- Third speed sensor enables turbocharger diagnosis



alphabearing



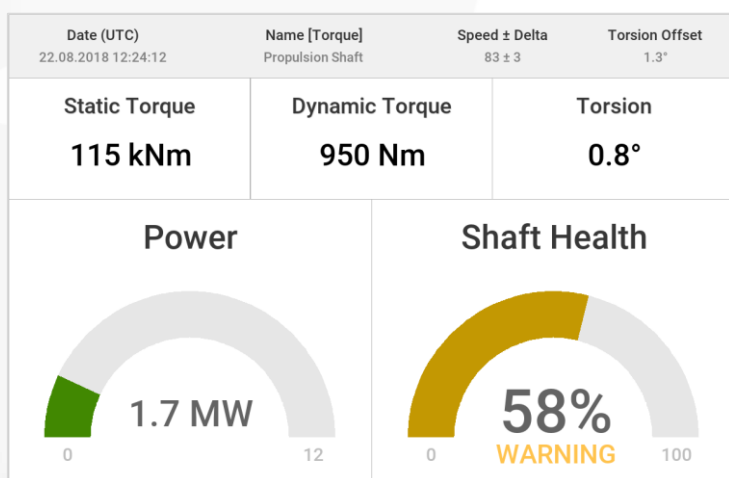
Example of a bearing diagnostic report

Excessive wear of bearings can result in unscheduled maintenance of vessels, reduced bearing lifetime and increased operating costs. By using **alphabearing** for bearing health condition monitoring, a fault can be detected at its initial stage. This allows sufficient time for repairs before significant failures occur. The performance of a bearing is important because a damaged bearing causes the vessel to lose power.



alphatorque

Propulsion economy is based on fuel efficiency and vessel reliability. To achieve an optimum result, a balance is required between fuel consumption, power output and economization of a vessel's motion. This can be obtained by the information provided by **alphatorque**, which is suitable for all shaft diameters and shaft speeds without the requirement of any electronic parts that have to be installed on the shaft. The system is easy to install, both on new vessels and on vessels in operation.



Example of a torque report

Product Features

- Use of non-intrusive sensors
- Easy-to-read reports
- Warning in case of risk of damage
- Optimization of spare part logistics
- Easy installation
- Plug & play by crew
- Reduction of maintenance overtime work
- High repeatability and accuracy
- Fully automatic operation
- Reliable and compact measuring device
- Maintenance free





alpha
cloud

Urgent and Direct
Communication



Detailed Report



Regular Reporting for
Every Asset



alphacloud

alphasystem collects diagnostic reports of measured devices and sends them from anywhere to **alphacloud** or any customer's cloud via GSM or other connected communication channel. This offers an unprecedented advantage and boosts your cost savings. **alphacloud** makes it possible for the condition monitoring and predictive maintenance to take place at any time and from any location via web-based access and coordination and helps to

- Reduce site visits with remote equipment monitoring and control.
- Ensure continuous operation of equipment, no matter how remote.
- Receive alerts, alarms and quickly identify problems as they occur.
- Improve operations, reduce costs and increase production/profits.

Benefits of alphasystem



Extended and optimized
power train lifetime



Avoidance of unnecessary
shutdowns



Easy retrofit on all
powertrains



Early detection of
impending failures



Quick ROI and reduced
energy cost



Significant savings due to
targeted maintenance

