

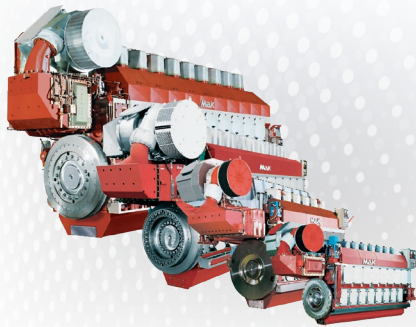
Crankshaft Bearing Condition Monitoring System

Medium Speed Engine Services Solution

What is the Crankshaft Bearing Condition Monitoring System?

The new Crankshaft Bearing Condition Monitoring System (CBCMS) allows you to easily and safely monitor the bearing condition of your crankshaft to detect creeping engine damage. This helps reduce your total cost of ownership and minimize downtime.

The new system offers its operators a cost-effective solution for medium-speed engines of the Cat® and MaK™ brands.



Which engine models are covered and what are the key requirements?

- For all current and legacy diesel, gas, and dual fuel engines
- Key requirements: All engine configurations without PTO (Power Take Off) shaft

What are the key benefits of the Crankshaft Bearing Condition Monitoring System?

- Precaution against capital engine damage
- Early diagnosis of creeping engine damage
- An alarm sounds before the temperature rises due to friction, by measuring the thermoelectric voltage
- Fast installation, as no rework of the crankcase or other crank drive elements is required

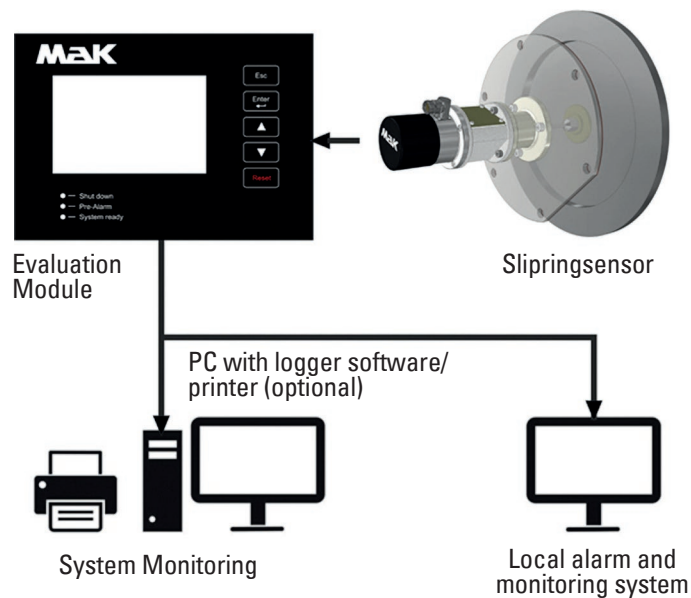
How does the Crankshaft Bearing Condition Monitoring System work?

The system for monitoring the condition of the crankshaft and bearings uses the thermo electric effect (Seebeck effect). This effect occurs when two different metals touch and is used for temperature measurement.

In an engine, this effect occurs when the oil film between sliding parts tears. This causes friction between the crankshaft (steel) and its bearing shells (bronze or aluminium), which increases the temperature and causes a thermoelectric effect.

The Crankshaft Bearing Condition Monitoring System can be used to specifically monitor the condition of the bearing and the sliding surfaces of the crankshaft. The system measures and analyzes the thermoelectric effect and signals changes that can be interpreted as harmful and can localize the bearing damage using the angular position of the rotary sensor shaft.

The system works completely passively by measuring the thermoelectric voltage that occurred due to the Seebeck effect and does not bring any voltage into the engine on its own.



Which services are provided by Caterpillar?

- Assembly and installation of the CBCMS
- Commissioning of the CBCMS
- Training of operators at the engine site

Are you interested in the Crankshaft Bearing Condition Monitoring System or need further information?

Please contact your dealer or the Parts Product Solutions Team directly at:
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