

Schaeffler Global Technology Solutions

Production Machinery

Schaeffler Technologies AG & Co. KG, Germany

Vibration monitoring as a Tool for Preventative Maintenance

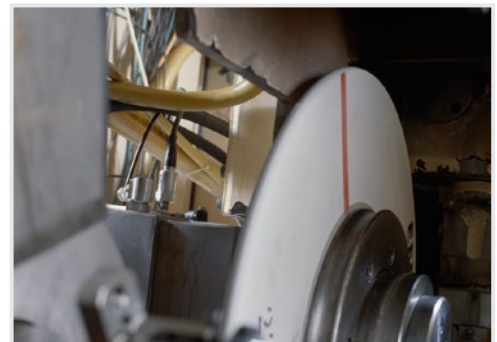
Schaeffler is a leading manufacturer of rolling bearings worldwide and a renowned supplier to the automotive industry. This globally active company and its 76 000 employees generated sales of approximately 11.1 billion euros in 2012. The Industrial division supplies products and services from the INA and FAG brands for over 60 different sectors. These include bearing support solutions for screw drives, main spindles, rotary tables and linear guidance units in machine tools. These components are also manufactured and fitted in the production machines, for which they are intended, in our plant in Schweinfurt, Germany.

Challenge for Schaeffler

The highest-possible precision and absolute operational reliability is required for manufacturing spindle bearings. Bearing damage must be detected at an early stage to avoid compromises in quality during production and to plan relevant measures in good time.

Schaeffler Solution

The online monitoring system FAG DTECT X1 was installed to monitor particularly critical spindles. Vibration signals from the spindle bearing support are permanently measured by the system and transmitted to the central computer or the Schaeffler online monitoring center. The FAG Detector III is used for offline vibration measurement of less critical, mobile spindles.



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Technical Information about the Plant

Grinding machine

External machining

Diameter, raceway, rib

Grinding wheel:

Max. diameter: 610 mm

Max. width: 80 mm

Workpiece:

Max. diameter: 160 mm

Max. width: 60 mm





Manual measurement on a spindle test stand



The FAG Detector III is a handy, easy-to-use offline vibration measuring device



Schaeffler service experts provide support for the installation of monitoring devices

Customer Benefit

Online and offline monitoring of grinding spindles improves maintenance planning and prevents expensive shutdowns and repairs due to subsequent damage. At the same time, the data from vibration monitoring of spindle bearings provides important information about the technical condition of the machine and the effectiveness of optimization measures, e. g. the leak-tightness of bearings. This data is, in turn, incorporated into the design to further improve the spindle bearings.

What's special

Damage to rolling bearings in varied applications can be detected at an early stage by online and offline vibration measurement with FAG monitoring devices. Schaeffler also offers a remote monitoring service for online monitoring. Service experts from the online monitoring center evaluate the data and immediately inform the plant operator if changes occur. This is particularly attractive for plants that are critical and difficult to access.

Technical Information about the Solution

Online monitoring system:

2-channel FAG DTECT X1

Sensors:

2 ICP accelerometers per unit

Housings:

IP66

Offline monitoring system:

FAG Detector III