

## Schaeffler Global Technology Solutions

### Pneumatik engineering and general ventilation systems

Otto Boge GmbH & Co. KG, Germany

### Monitoring of Compressors – Saving Maintenance and Energy Costs

Boge Kompressoren is one of the worldwide leading manufacturers of compressors and compressed air systems. Boge not only stands for high product quality made in Germany but also offers complete solutions for efficient supply with compressed air. The family enterprise is one of the oldest compressor manufacturers in Germany and has subsidiaries and sales offices in more than 120 countries around the world. Boge has 600 employees, 400 of them at the company's headquarters in Bielefeld.

#### Challenge for Schaeffler

Compressors are needed to move and compress air or other particles. They are subjected to heavy stressing and substantial vibration in operation. These can cause failure of the compressors in no time at all and without any outwardly noticeable signs. To minimize this incalculable risk, and to improve the compressors' availability, Boge wished to find a reliable and cost efficient monitoring system that is based on vibration diagnosis.

#### Schaeffler Solution

Boge was one of the first customers in the field of compressors and compressed air systems to install the FAG SmartCheck. The compact measuring system permits online monitoring of the compressor stage with the help of just a single sensor. It is the first of the vibration measuring devices in this price range to permit correlating classic and vibration based parameters and thus comprehensive monitoring of machines. The novel alarm system ensures that operators are informed about any machine damage reliably and at an early stage. As the installation of the FAG SmartCheck requires no mechanical conversion, existing systems can be easily retrofitted as well.



#### Technical Information about the Product Portfolio

##### Types:

- Screw-type compressors
- Piston compressors
- Oil lubricated or oil-free compressors
- Complex systems or single units

##### Performance parameters:

Motor range:	0,4 – 355 kW
Free air delivery:	0,1 – 51,4 m <sup>3</sup> /min
Compressed air:	4 – 40 bar

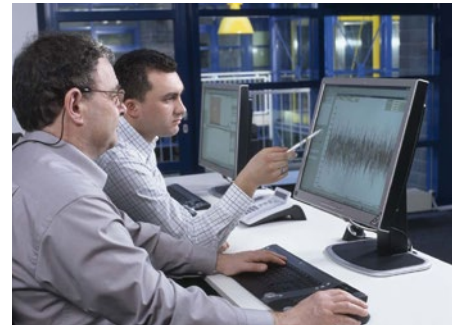




Monitoring of a screw compressor of Boge



FAG SmartCheck is a cost-effective, innovative online measuring system



The FAG SmartCheck offers many different expansion options – up to remote monitoring

## Customer Benefit

The compressors' reliability can be increased only through comprehensive monitoring. Both the manufacturer and the operators of the compressors benefit equally from the FAG SmartCheck: They receive a small, modular, cost efficient measuring device that is also ideally suitable for standard equipment. The basic version of the FAG SmartCheck permits real time monitoring and output of measured data at the machine. Higher levels of system integration can be realized easily. Since the system offers all the features of significantly more expensive monitoring systems, it makes an important contribution towards avoiding unscheduled downtimes, that involve considerable production disruption costs. This leads to an increase of operational safety and enables efficient maintenance cycle planning.

## What's special

Compressors must work reliably. Permanent monitoring and analysis of all compressor parameters ensure not only perfect operation. They also provide the basis for long-term optimization of the machines' design and thus offer an enormous energy saving potential. Further applications that can be monitored with the FAG SmartCheck include vacuum pumps or vibrating screens.

### Technical Information about the Solution

#### Monitoring system used:

1 FAG SmartCheck per compressor

#### Vibration sensor used:

High resolution piezo sensor

#### Operating parameters monitored:

- Temperature at the compressor housing
- Motor/engine vibrations during operation

#### Further options:

- History data (up to several years)
- Integration into a control unit or control station
- Remote monitoring