

Added value through digitalization



The digital revolution and the linking of components and systems increases the efficiency of machines and equipment.

Schaeffler is shaping the field of digital transformation with a clear vision and specific solutions.

Our Smart EcoSystem offers a standardized hard and software infrastructure from components equipped with sensors through to digital services and business models:

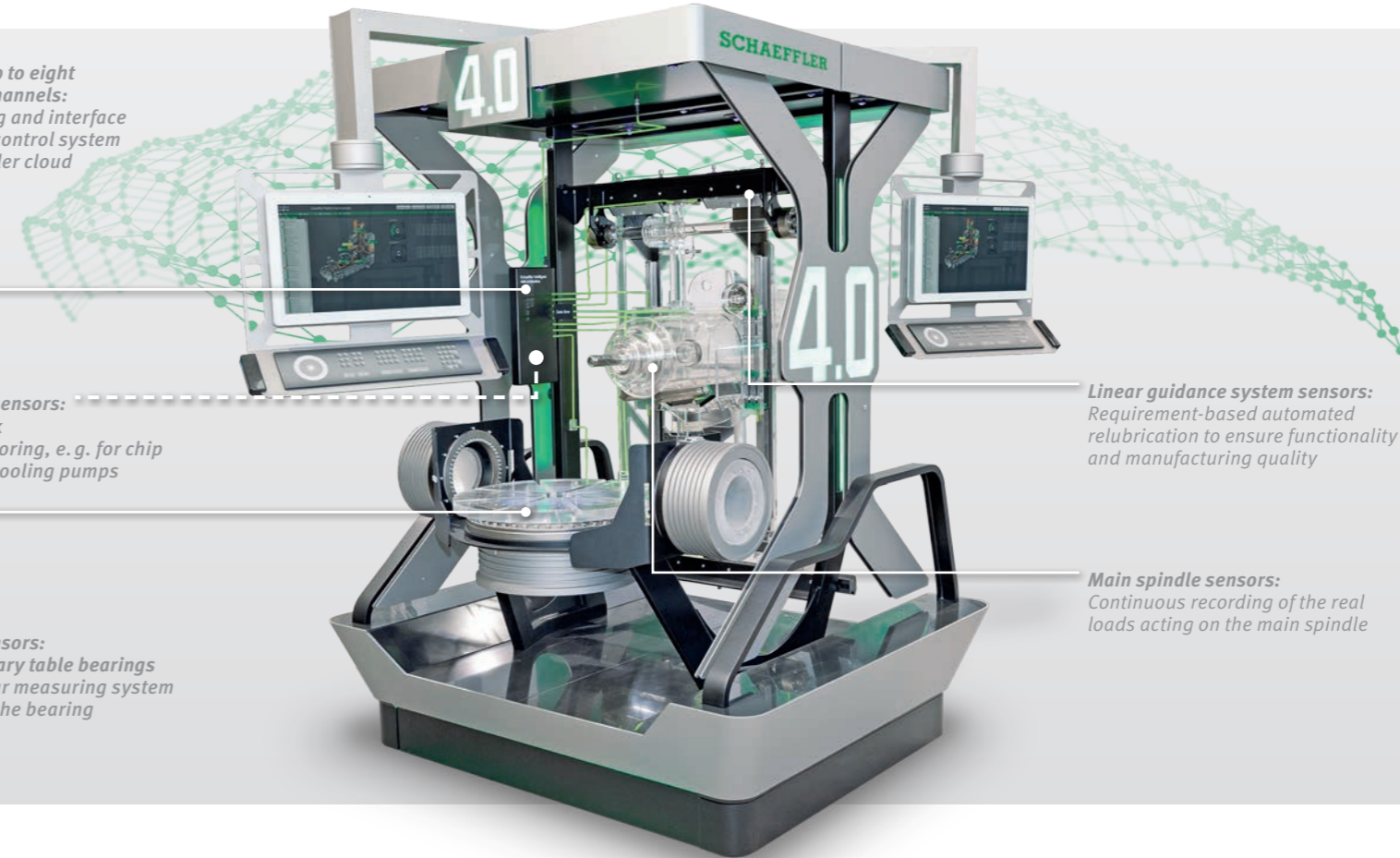
- You can reliably and precisely gather important data for controlling processes and machine monitoring with sensors and mechatronic products from Schaeffler.
- Use Schaeffler's unique domain expertise in the form of digital services to automatically generate relevant information from the collected data and to receive specific recommended actions.
- Benefit from our digital solutions such as the Machine Tool 4.0 and use these solutions in a targeted manner to control processes, maximize availability, and optimize product quality.

Setup and function

Gateway with up to eight measurement channels:
Local monitoring and interface to the machine control system and the Schaeffler cloud

Auxiliary drive sensors:
FAG SmartCheck
Condition monitoring, e.g. for chip conveyors and cooling pumps

Rotary table sensors:
INA YRTCMA rotary table bearings
Absolute angular measuring system integrated into the bearing



Linear guidance system sensors:
Requirement-based automated relubrication to ensure functionality and manufacturing quality

Main spindle sensors:
Continuous recording of the real loads acting on the main spindle

High-performance, scalable cloud infrastructure with the highest data security standards and access to digital services:

- **System visualization**
The condition of the system can be viewed at a glance via web browser
- **LoadAnalyzer**
Records the real load collective of the main spindle and allows the optimum operating mode to be set
- **ConditionAnalyzer**
Diagnoses damage, misalignments, and imbalance for rolling bearings and linear guidance systems
- **LifetimeAnalyzer**
Calculates the remaining useful life of rolling bearings and linear guidance systems, and determines the optimum time for maintenance

Predictive Maintenance for Machine Tool 4.0

Schaeffler's multi-channel condition monitoring system provides a modular condition monitoring concept for Machine Tool 4.0. In addition to central drive components like axes, feed drives, and spindles, functionally critical auxiliary drives such as hydraulic motors can also be monitored. The components and sensors are designed for the restricted design envelope of machine tools.

Products and measuring systems from other manufacturers can also be flexibly integrated into the overall system in addition to Schaeffler's

own sensors and mechatronic systems. Our solution thus provides holistic condition monitoring and prognosis for key components in the machine tool using a single monitoring system.

Connecting to the Schaeffler cloud makes all of Schaeffler's digital services easy to access and use.

You can benefit from our digital solutions for machine tools and increase both availability and productivity.

The advantages at a glance

- Eight measurement channels
- Monitoring of key components and functionally critical auxiliary drives
- Sensors and measuring systems from other manufacturers can be integrated
- Schaeffler's digital services can be used by connecting to the Schaeffler cloud



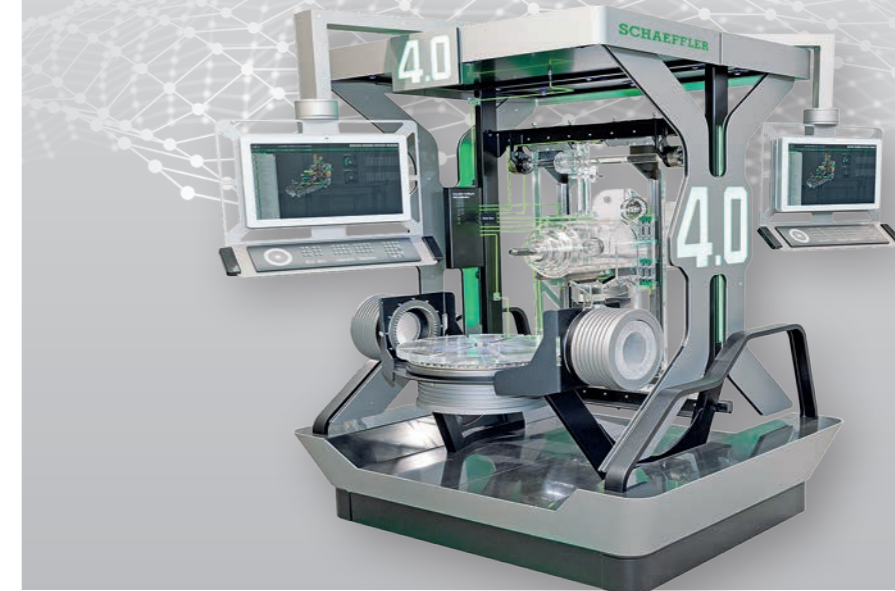
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Rolling bearings
Plain bearings
Linear technology
Digitalization

PREDICTIVE MAINTENANCE for Machine Tool 4.0



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