

Condition Monitoring System (CMS)

Torque arm gearbox monitoring

- Sensors integrated in the elastomer supports record the actual load in the torque arm gearboxes
- Integration of the sensors in a Condition Monitoring System is possible



Sensor chip



EFFBE

Member of the Woco Group

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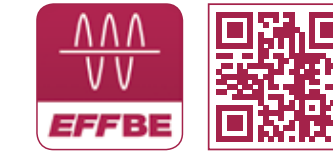
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EFFBE APP – The mobile vibration meter

Wind energy

EFFBE – Function developer and supplier of high-performance polymer damping and sealing solutions for demanding industrial applications in the wind power industry

www.effbe.de

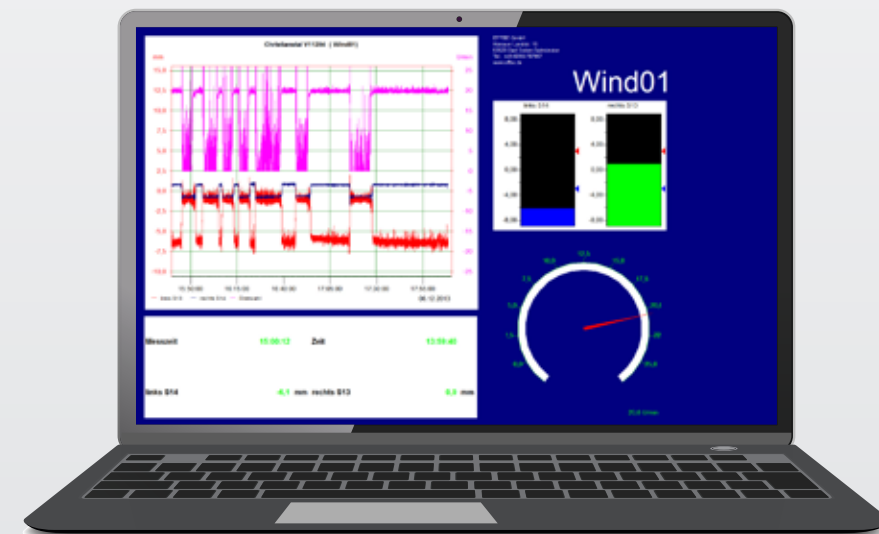
Problem

The recording of the actual values of the loads at the torque arm gearboxes can allow conclusions to be drawn regarding the operating state of the gearbox unit. These data are currently not recorded or analysed during day-to-day operation.

Solution

- Sensors from the EFFBE Air Level Control System
- Simple integration in a CMS
- User-friendly handling
- Low costs

Continuous recording of loads at the mounting elements



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EFFBE and the Woco Group worldwide



EFFBE – over 65 years of experience in the development and manufacturing of plastic and rubber products for the industry

Access to Woco Group's production sites, development centres and partners in more than 14 countries worldwide puts us in a position to exploit development, production and sales synergies. Take advantage of a global and flexible competence network.

ELASTOMER COMPRESSION SPRINGS



RUBBER-BONDED METAL



LEVELMOUNT



MEMBRAN AIR MOUNTS



PNEUMATIC CYLINDERS



From the idea to the product

EFFBE, a wholly-owned subsidiary of the Woco Group uses the synergy effect from all specialist departments, from request-based material/product development to FEM simulations and tool construction, and right through to production.

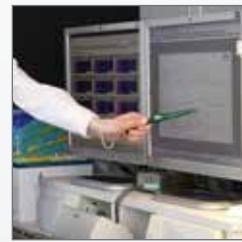
Woco develops and manufactures products that noticeably improve the acoustic comfort and safety of vehicles, and their use also results in a higher level of environmental protection due to a reduction in noise and consumption.

In the industrial sector, Woco products improve the efficiency and safety of machinery and equipment.

They serve to reduce vibrations and to seal off and separate gases and liquids. The Woco Group has 19 sites worldwide and a total workforce of 4,000.

Woco's functional solutions allow the use of different materials. In this regard, Woco is also an expert in materials and in the processing of polymers. Woco supports its customers in development and production, using its global facilities to optimise logistics and lower costs.

As a family-owned company, Woco is a reliable, long-term business partner to its customers, employees, and suppliers.



- Pre-development
- Development and design
- Calculation, configuration and simulation
- Trials and prototyping

- Application-based and technical consultation
- Customer-specific problem-solving
- Vibration measurements
- Acoustic measurements

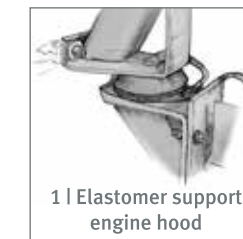


- Over 2,800 active recipes and more than 1,300 raw materials
- Laboratory and own mixing facility
- Rubber, polyurethanes (PUR), plastics, thermoplastic elastomers (TPE), metals and other special materials



- Tool construction / tooling technology
- Process simulation
- Laboratory tests and endurance tests
- Trials and prototyping
- Production and assembly

Overview of product range



1 | Elastomer support engine hood



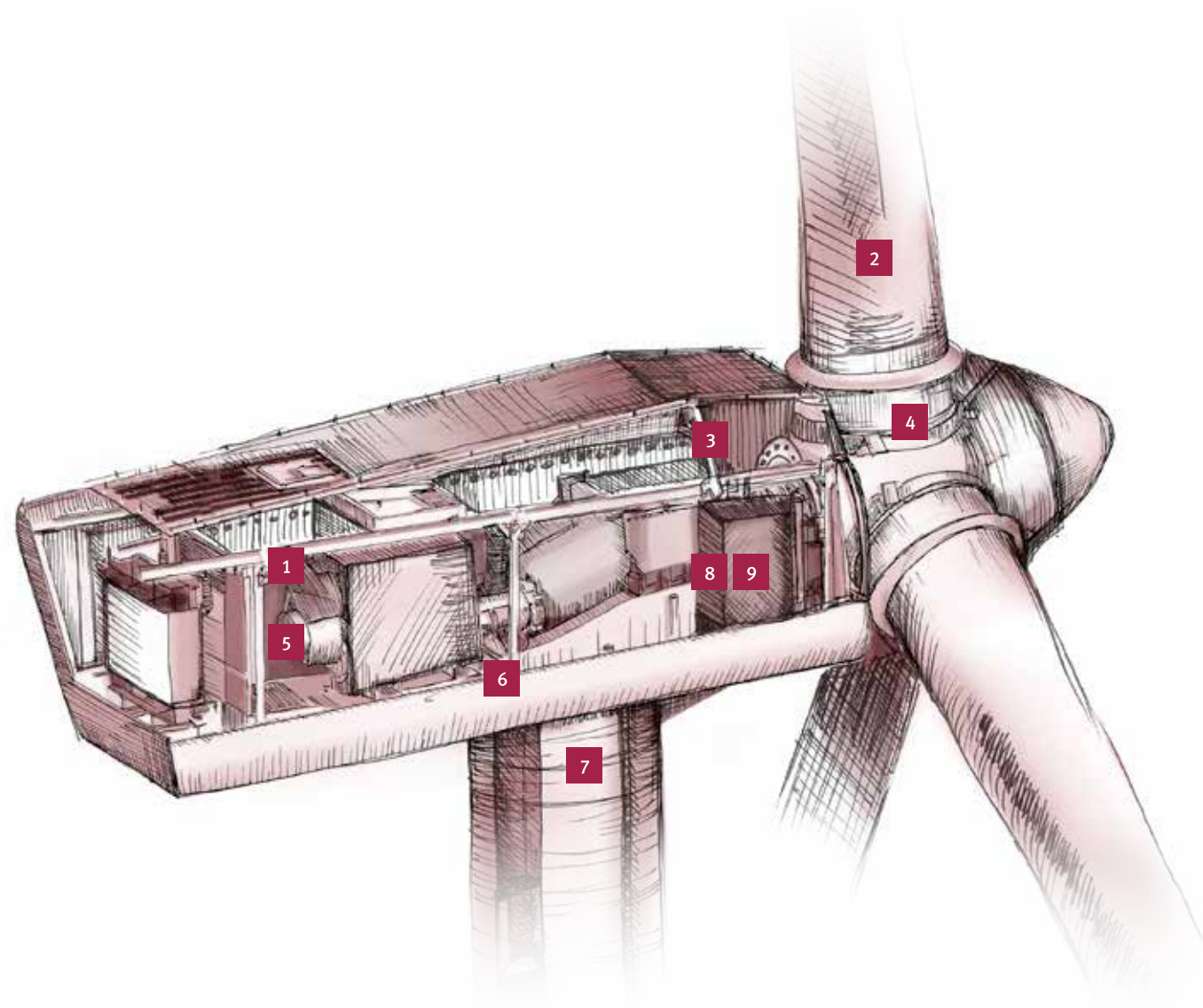
2 | Elastomer compression springs



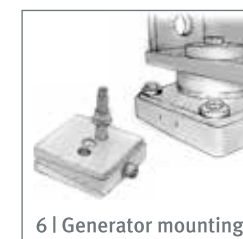
3 | Elastomer support ventilator



4 | Elastomer support pitch drives



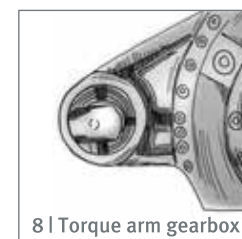
5 | Control box mounting



6 | Generator mounting



7 | Azimuth system



8 | Torque arm gearbox



9 | Condition monitoring for torque arm gearboxes

Selection from product range

Gearbox mountings

Torque arm gearboxes with elastomer body made of EFFBE Urelast®.

- Longer service life in comparison to an unbonded spring
- Wearing of springs is minimised
- Optimised spring stiffness in comparison to rubber/metal-coated spring
- Improved vibration reduction in environment of torque arm gearbox



Azimuth system

Bonded spring assembly made of EFFBE Urelast® which is designed to avoid the loss of the braking effect of the claw bars in the azimuth system.

- Unbreakable – Elastomer compression springs retain force, an absolute loss of force is not possible
- Free of wear
- Flatter spring characteristic
- Larger permissible load range in comparison to plate springs, for same installation space
- Preload force adjustable by varying rotation angle
- Avoidance of total failure of azimuth drives
- Same installation space/connection dimensions



Generator mountings and mounting elements for all applications

Custom-developed mounting elements for generator mountings and standard mounting elements from the Levelmount series

- Source and receiver insulation
- Vibration insulation
- Structure-borne noise insulation
- Shock absorption



Elastomer compression springs

Elastomer compression springs made of EFFBE Urelast® with a wide range of qualities and hardnesses, specifically designed for the given application.

- Very long service life
- Defined spring properties
- Bonded, unbonded
- Customised component parts, any design geometry possible

