Motor and Gearboxes for a Very Demanding Application Field

ABM Greiffenberger Introduces New Drive Solutions for Wind Turbines

As a manufacturer of electric drives for pallet trucks, textile machines and cranes, ABM Greiffenberger has vast experience in developing and producing drive systems for demanding applications. These experiences have now been applied to the development of a new gearbox line for wind turbine yaw and pitch drives. ABM will exhibit these new products at the Hannover fair.

Application Example
Wind Turbine

For industrial drive technologies wind turbines are the benchmark for highest loads. Drives are exposed to extreme ambient conditions – this applies especially to off-shore installations. Forces they are being impacted with - especially during storms and wind gusts - are extreme. At the same time drives must be low in maintenance because they are not easily accessible. Extreme are also the durability demands: 20 years are considered the minimum standard.

Experiences from Other Demanding Application Fields

If one wants to stand the test in this field, it is also essential to provide high grade and resilient components. Entry barriers are high for a “newcomer” but ABM Greiffenberger is convinced to be successful from the get go in this demanding

market. After all the company incorporated experiences from other application fields with extreme demands on availability, durability and safety; demonstrated with more than 500,000 overhead crane drives manufactured in over 25 years.

All-of-One-Piece Drive Systems

Exactly this experience has been applied by our engineers to develop complete drive systems for wind turbines. Even metaphorically this statement is correct: All system components – motors, gearboxes and brakes – have been carefully tuned and meet the highest demands for quality and durability.

Yaw Drives: Extremely Robust

ABM Yaw Drive

The new ABM Greiffenberger yaw drives maintain nacelle positions to the wind to maximize energy generation. Here, a combination of induction motors and multi-stage planetary gearboxes are used. Motor outputs range from 2.2 to 22 kW, gearboxes are available in ratios from 100 to 2000. Drive systems have output torque ratings from 2,000 to 50,000 Nm and maximum output torques of up to 100, 000 Nm.

Pitch Drives: Compact and Durable

ABM Pitch Drives

Pitch drives position the setting angle for each blade to the wind. They must be more compact than yaw drives and likewise guarantee highest reliability. ABM Greiffenberger pitch drives meet these requirements. Even when exposed to the toughest environment they perform steady over the complete duration of 20 years and even more.

High Efficiency for Optimum Yield

New yaw and pitch drives with outstanding efficiency set the premise for maximum recovery of this environmentally friendly power generating technology. High grade, perfectly tuned components mostly manufactured in-house as well as robust roller bearings guarantee maximum life with minimal maintenance. High torsion resistance guarantees that even with high wind gusts the exact position is maintained. Drives can be used at ambient temperatures as low as – 40° C.

Silent Running and High Overload Capacity

Furthermore, the complete drive program for wind turbines excels with silent running, high overload capacity and maximum efficiency. Drives meet the tough demands of wind turbine OEM's on reliability and durability and allow easy oil changes even in adverse conditions such as the high altitudes of a wind turbine tower.

Exemplary Quality

For development the latest configuration software such as KISSOFT and CAD programs are being used. Even single gears of the gearbox are being designed for the harsh operating environment and long service life with special gearing software.

This applies to planetary gears as well as case-hardened and subsequently hard-machined pinions.

FEM-analysis to validate developments is equally a matter of course as are customer specific tests in our well equipped test laboratory. For production modern machine tools and real-time controls guarantee highest quality. Measuring and testing machines, e.g. 3D coordinate measuring machines, for regular inspection of finished parts such as sun gears and housings are available.

Individually Tuned for Each Application

Even with the available modular standard program ABM Greiffenberger developed for these applications, “ready-made” solutions are not commonly used. Rather individual drive systems are developed in close cooperation with wind turbine OEM’s. ABM Greiffenberger is also hereon well prepared. Our engineers have vast experience in developing and configuring customized solutions – even with requirements beyond industry typical standards. This does not only apply to output, speed and ratio but also for design and protective finish. So for example drives with right-angle gearboxes are possible and offshore-versions can be delivered with saltwater-proof paint.

Premiere at the Hannover Messe

ABM Greiffenberger will introduce for the first time the drive program for wind technology, not as usual on the trade fair „Motion, Drives & Automation“, but at the “Wind“ in **Building 27, booth L10.** After all here one is quite close to potential customers for yaw and pitch drives.

We are pleased to invite you to our press conference that takes place on:
Tuesday, 21.04.09, from 1:00 to 2:00 pm
at CC, Hall 107.

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