

ABM Greiffenberger at Hannover Messe „Wind“ 2011

Electric Drive Units for Pitch-Adjustment of Wind Turbines

At Hannover Messe 2011 ABM Greiffenberger shows adjustment drive units for wind turbines featuring an extremely long durability in adverse environmental conditions and highest energy efficiency. Therewith the company demonstrates it's competency in development and manufacturing of electric drive unit systems for challenging areas of application.

What has ABM Greiffenberger going for as well-known and established manufacturer of electric drive units for industrial applications in Hannover at „Wind“?

First of all - Know How:

Drive units for wind turbines have to meet highest demands on durability and work in adverse environmental conditions at the same time. Here ABM Greiffenberger scores with a wide development and application knowledge about wind power and other challenging applications.

Secondly – A well-rehearsed team:

More than 120 of our approximately 600 employees operate in the sector “Renewable Energies” in the meantime.

Thirdly – Success:

Sales in the business segment “Wind Power” could nearly be doubled in 2010 compared to the previous year.

Fourthly – Customized solutions:

To manufacturers of wind turbines ABM Greiffenberger offers a program of drive units especially developed for these applications in pitch adjustment as well as yaw drive units.

In the center: Concepts of pitch drive units

At „Wind 2011“ ABM Greiffenberger puts the pitch drive units adjusting the blade angle of the rotor according to the wind speed into the foreground. The company supplies manufacturers of complete pitch systems with these drive units and customizes the motors for the individual demands of system integrators and equipment manufacturers.



*Complete pitch drive units by ABM Greiffenberger:
Durable
Environmentally friendly
Low Maintenance*

To move the blades into a safe position even at mains power failure the electrical pitch systems are buffered by batteries. Thereby, depending on the manufacturers different inverters are used for activation of the motors. According to the battery voltage the motors are designed for 29 VAC up to 400 VAC. Thereby, the users of ABM pitch motors benefit from the comprehensive experiences the company collected with industrial motors as well as electric motors for mobile applications, e.g. in battery operated forklifts.

Optimally suited for the travel profiles of pitch drive units

In electrical pitch drive units ABM asynchronous motors are being employed featuring a low inertia and high overload capability in short time duty. Therewith, they are ideally qualified to adjust the blade position continuously at low speeds and to turn the blades out of the wind rapidly in emergency mode. The power transmission takes place by compact, multiple-stage planetary gearboxes.

A construction kit system for pitch adjustment

The electro-magnetic parking brake is also designed by ABM for the individual case of operation and provided in a completely enclosed construction with emergency braking capabilities. Necessary speed and position sensors are available in different specifications (encoder or resolver). External cooling can be executed with axial or radial air supply. The motor connection happens depending on customer's request by connectors or extra large junction boxes. Therefore, ABM Greiffenberger offers a construction kit system easily adaptable to particular demands. The high grade, perfectly matched components assure long durability at minimum maintenance efforts. The high torsional stiffness of the planetary gearboxes ensures exact positioning even at high wind gusts.

Gearbox development in close cooperation with the customer



Manufacturing accompanying checks stand for highest quality: Continuously a 3D-coordinate-measuring-device checks manufactured parts like ring gears and housings.

The drive unit systems for pitch and yaw adjustment are developed in close cooperation with the customer. Newest dimensioning and CAD-programs are used in doing so. FEM-analysis and gearing calculations are also amongst the tools of the developers. Even the output pinions are tuned exactly to the case of application. To achieve the specified lifetime of 20 years at minimum maintenance efforts motor and gearbox manufacturing happens at the ABM plant Marktredwitz (North-Eastern Bavaria) according to highest quality scales.

Naturally, the 3D-coordinate-measuring-device is part of quality assurance and used to periodically gauge manufactured parts like ring gears and housings.

In the future: New motor design

ABM Greiffenberger also uses „Wind 2011“ to introduce a new, even more efficient series of motors to the customers in the wind industry.

The **SINOCHRON**[®] Motors developed by ABM can further improve the dynamic characteristics of pitch systems. Because, these synchronous motors with embedded magnets in the rotor have a dramatically reduced intrinsic inertia at identical torque and a considerably better efficiency than asynchronous machines. Thus, they are downright predestined for applications operating the motor oftentimes partially loaded and the dynamic is most significant. First tests at a customer showed promising results.

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