

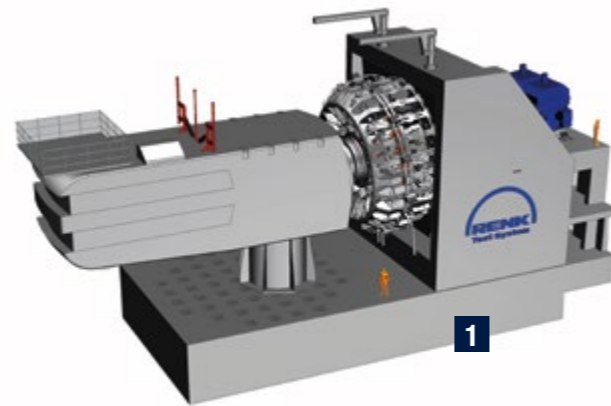
Test Systems for Wind Turbines
Technical Information

Test Systems for more reliability of your products

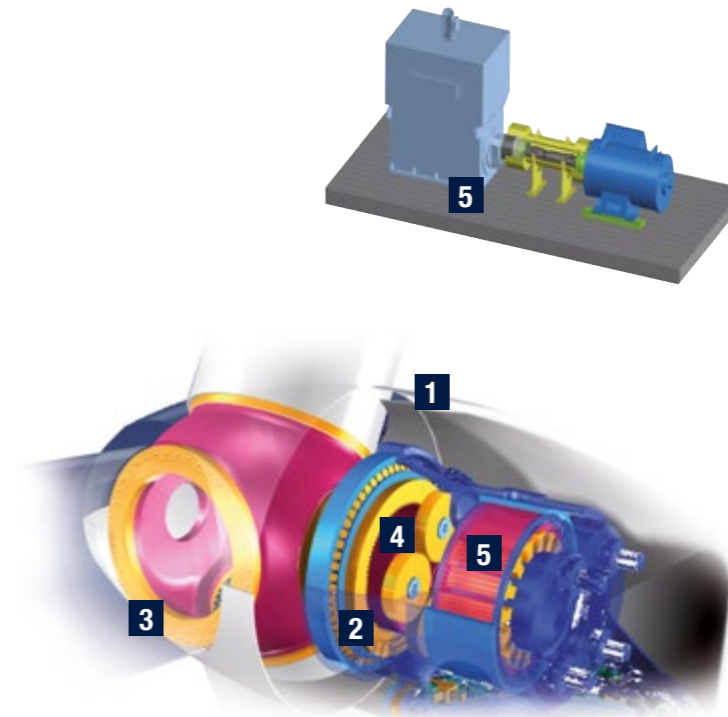
The importance of wind power for the generation of electricity from renewable energies is increasing at an accelerating pace worldwide. Short development cycles today are placing maximum requirements on the developers of plant and equipment as well as components.



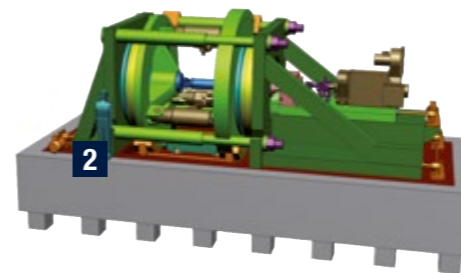
The globalization of the market as well as the expansion of cost-intensive wind parks requires technologies of maximum availability and reliability. Test systems from RENK Test System provide a basis for consistent product improvement and upgrade. Complex system functions as well as dynamic operating states are tested in the lab for a controlled and systematic analysis of their effects. Test systems from RENK Test System are developed in close contact with the future operator and are used in product development, type approval and production-level tests as well as for preliminary system commissioning.



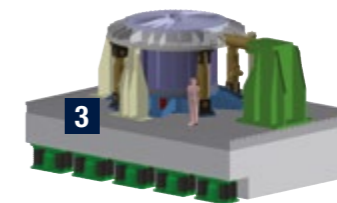
- 1 Driveline/Gondola Nacelle Test Stands:**
- Testing of various drivelines and complete nacelles
 - Optional wind load simulation using a dynamic 6DOF (six degrees of freedom) loading mechanism
 - Utilized in development, type approval and production-level testing
 - Reproduction of real dynamic movements of the driveline under wind load conditions
 - Analysis of components within an integrated system
 - Verification of overall system behavior
 - Reproduction of events recorded in field measurements for problem solving under laboratory conditions
 - Reproduction of electrical net pollution
 - Standard measurements, such as temperature, structure-borne sound, noise, etc.
 - Pre-commissioning in the laboratory



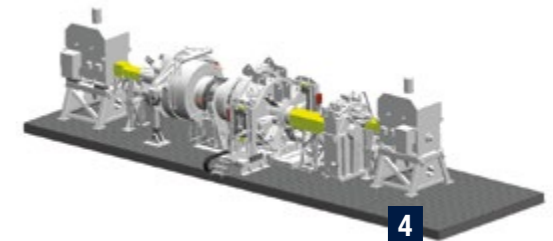
- 5 Generator Test Stands:**
- Testing of various generator-converter combinations
 - Utilized in development and type approval tests
 - Reproduction of electrical mains pollution
 - Validation of new software versions in the laboratory
 - Standard measurements, such as temperature, structure-borne sound, noise, etc.



- 2 Main Rotor Bearing Test Stands:**
- Testing of various main rotor bearings with dynamic wind load simulation
 - Testing in real installation position in single and back-to-back arrangement
 - Utilized in development and type approval tests
 - Analysis of rolling element behavior under dynamic bearing loads
 - Lubricant analysis under extreme conditions
 - Standard measurements, such as temperature, structure-borne sound, noise, etc.



- 3 Rotor Blade Bearing and Azimuth Bearing Test Stands:**
- Testing of various rotor blade and azimuth bearings with dynamic load application
 - Testing in single and back-to-back arrangement
 - Utilized in development and type approval tests
 - Analysis of rolling element behavior under dynamic bearing loads
 - Lubricant analysis under extreme conditions
 - Standard measurements, such as temperature, structure-borne sound, noise, etc.



- 4 Gear Unit Test Stands:**
- Testing of various large gear units in single and back-to-back arrangement
 - Utilized in development, type approval and production-level tests
 - Load application optional, electrically or mechanically
 - Wear pattern check after full load and overload
 - Lubricant analysis under extreme conditions
 - Standard measurements, such as temperature, structure-borne sound, noise, etc.



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