

## 4.5 PARTZSCH Windgeneratoren Service GmbH

### 4.5.1 General information

As a part of the PARTZSCH group of companies, PARTZSCH Windgeneratoren Service GmbH complements our services with its comprehensive range of services in the considerably grown field of wind turbines. As a full service provider our customers

can benefit from our services for all types of wind turbines with intermediate gearing. With the on-site service included in our service programme, downtimes of wind turbines can be significantly reduced.

### 4.5.2 Range of services

- ▶ Laser-optical alignment of the generator gearing unit
- ▶ Vibration measurement, including bearing diagnosis
- ▶ Repair with bearing replacement
- ▶ Repair and maintenance of slip-ring chambers, incl. replacement of brush holders and brushes
- ▶ Replacement and renewal of slip-ring assemblies
- ▶ Replacement of rotor lines for generators of various manufacturers

Our engineers coordinate the general overhaul and repair of your wind turbines also outside of Europe. These services include all assembly operations, including the provision of cranes, the transport of

generators for repair in our factory as well as the reinstallation and adjustment. In order to minimise your downtimes, we have a huge number of replacement generators available. In addition, spare parts for all conventional generators are kept in stock. These include:

- ▶ New and refurbished slip-ring assemblies
- ▶ Deep-groove ball bearings in various sizes
- ▶ Fan motors
- ▶ Brush holders for various generator types
- ▶ Brushes in various dimensions



Source: Fotolia\_97913269

### 4.5.3 Equipment

In order to offer the best possible customer service throughout Europe, the company acquired five new Mercedes-Benz Vito.

A special highlight here is the innovative shelf system, which offers space for numerous assembly tools and spare parts. With these, our employees are well equipped and can react quickly to problems occurring during repair services on site.

In our service vehicles the following measuring equipment and tools are available:

- ▶ Motor analyser, manufacturer: Schleich
- ▶ Milliohm meter Metra Hit 27M, manufacturer: GOSSEN Metrawatt
- ▶ Vibration measuring instrument VT 60, incl. software, manufacturer: Brüel & Kjaer Vibro
- ▶ Laser-optical alignment measuring tool Rotalign, manufacturer: Prüftechnik AG
- ▶ Hydraulic torque wrench, manufacturer: Hydratight, 200 to 1,800 Nm
- ▶ Manual torque multiplier, manufacturer: Lösomat, 540 to 4,000 Nm

### 4.5.4 Workshop services

Within the scope of major repairs we can offer the following workshop services:

- ▶ Disassembly, electr. / mech. diagnoses
- ▶ Cleaning (washing and drying)
- ▶ Rewinding of stator and rotor windings
- ▶ Repair or replacement of defective laminated cores of stators and rotors in a very short time due to in-house production using laser cutting
- ▶ Reconditioning of bearing seats in the end shield and on rotor shafts
- ▶ Replacement of bearings, mounting
- ▶ Dynamic balancing and overspeed testing of rotors and couplings
- ▶ Colouring
- ▶ Operation in test facility



3D model Gamma / Source: Nordex SE



Runout inspection on slip-ring assembly



Laser-optical alignment control measurement

## 4.5.5 Quality assessment

### 4.5.5.1 Test and measuring equipment

#### **i** ELECTRICAL TEST AND MEASURING EQUIPMENT

- ▶ SCHLEICH milliohm meter  
RESISTOMAT type 2316-V0001
- ▶ SCHLEICH motor analyser 1-XL
- ▶ Insulation resistance measuring instruments  
GOSSEN-Metrawatt METRISO 5000 A
- ▶ Insulation resistance measuring instruments  
GOSSEN-Metrawatt METRISO PRIME
- ▶ Multimeter METRAHIT 27 M
- ▶ Various digital multimeters

Our test and measuring equipment is sent in for calibration at defined intervals.

### 4.5.5.2 Certificates

The regular training of our employees is of high significance in our company. All employees have acquired the corresponding certificates obligatory for the performance of our assembly services. These include medical examinations G41, safety at height training with abseil exercises of the German Red Cross, training as electrically trained person (EUP) and trainings on fire safety. Trainings are provided in-house by appropriate specialists or held at the employers' liability insurance association in Dresden.

Basic knowledge on the control of plants serviced by us is ensured by various trainings provided by our customers.

### 4.5.6 Fleet

Our fleet comprises seven service vehicles type Mercedes-Benz Vito, equipped with the shelf system SORTIMO and all necessary tools for the repair of generators.

#### **i** MECHANICAL TEST AND MEASURING EQUIPMENT

- ▶ Alignment measuring tool ROTALIGN laser ALI 3.610
- ▶ Vibration measuring instrument VIBROTEST VT60
- ▶ Dial gauges / callipers
- ▶ Mechanical outside micrometres
- ▶ Mechanical inside micrometres
- ▶ Torque wrenches in the following sizes:  
10 – 100 Nm / 80 – 400 Nm / 250 – 850 Nm
- ▶ Mechanical torque multiplier, manufacturer:  
Lösomat, 540-4,000 Nm
- ▶ Hydraulic torque wrench, manufacturer:  
Hydratight, 200-1,800 Nm



Generator in a wind turbine



Service vehicle