



Service and Repair of Rotating Machines with High Performance

HELMKE continues to employ state-of-the-art technology for processing and balancing, both for tests in our test fields and work carried out at site. All site work and repairs will be executed utilising the latest industry materials and components. Our facility capacity allows a maximum lift of up to 100 t motor weight.

You have a motor failure?

HELMKE's highly qualified Service Partners, in house service technical experts and qualified field engineers are available on a 24/7 basis. Capable of organising at short notice:

- ▶ Fastest possible collection
- ▶ Immediate diagnosis
- ▶ Quality and Safe Repair, overhaul and testing – on a 24/7 basis
- ▶ Return transport, safe installation and commissioning

Production audits are in compliance with: **ISO 9001, ISO 14001, ATEX, IECEx and AEO**

HAVE AN EMERGENCY?

Contact us for any emergency service. **We are also available after business hours via our emergency cell phone.**

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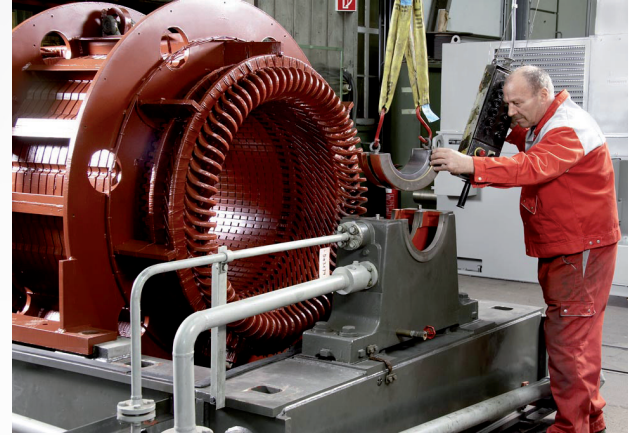
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Revision

Service, Maintenance and Repair



Revision of all drives within the high-voltage, low-voltage and DC range.

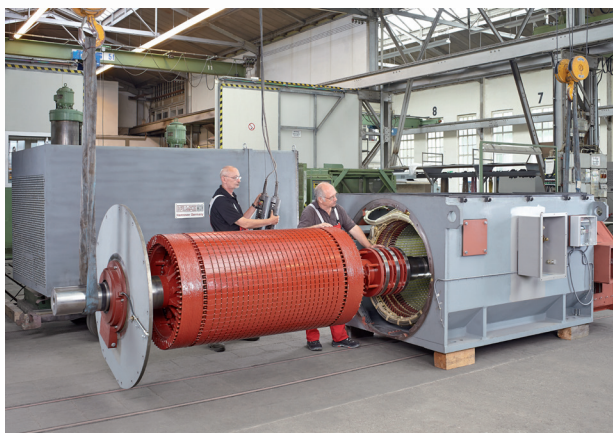
In the course of such overhauling and reconditioning the following can be carried out:

- ▶ Steam jet cleaning and drying of winding components
- ▶ Fitness check for sensors and monitoring devices
- ▶ Verification of mechanical and electrical fitness for operation
- ▶ Dynamic balancing of the motors
- ▶ Maintenance for sleeve bearing, seals and gaskets
- ▶ Exchange of rolling bearings

Exterior protective coating according to HELMKE standard as well as customer requirements:

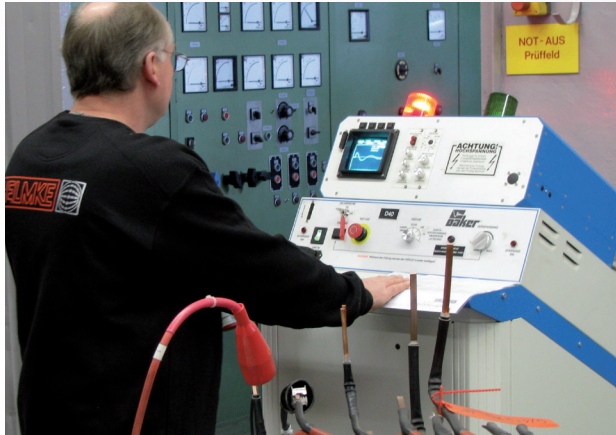
- ▶ Sand blasting of complete machine or its elements
- ▶ Painting of all machine parts on open circuit air-cooled machines
- ▶ Special coating according to customer requirements for offshore applications
- ▶ Test reports for painting layers its adhesion and coat thickness

Documented final check testing



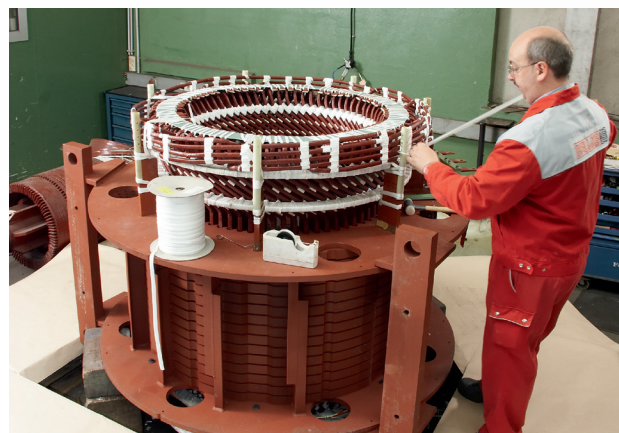
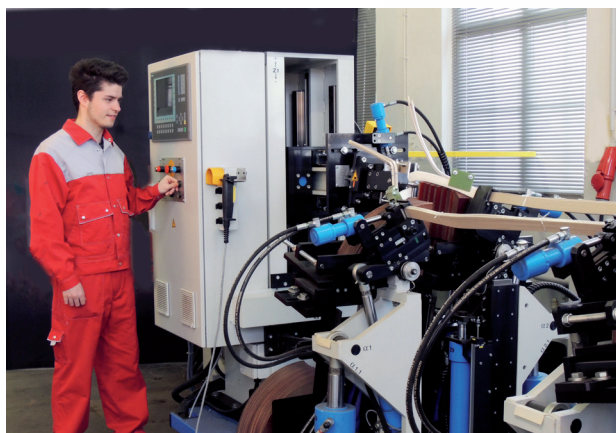
Windings

Highest Quality in Production and Delivery



In our workshops, equipped with state of the art technology, windings for new machines as well as for repairs of low, medium and dc voltage machines are produced. Our capabilities include:

- ▶ Converter compatible low-voltage mush windings in temperature class F or H in voltage range of up to 1000V and power range of 0.55kW to approx. 1500kW
- ▶ Converter compatible low-voltage form wound windings in temperature classes F or H up to 1000V and up to 2600kW
- ▶ High-voltage form wound windings manufactured through resin-rich process in a voltage range of 3000 or 6000 +/-10% and power ranging from approx. 250kW to approx. 5600kW in temperature class F
- ▶ High-voltage form wound windings (VPI process) with soft coils, voltage ranges over 3000/6000/10000 or 13800V ($\pm 10\%$), power range from approx. 200kW up to 20000kW in temperature class F
- ▶ High-voltage stators with completed core (VPI process) with softcoils, voltage ranges 3000/6000/10000 or 13800V $\pm 10\%$ in temperature class F
- ▶ Mush windings of pipe pump stators with completed core (going from 8" to 14"), voltage ranges from 400V to 1000V and performances ranging from 5.5kW to 200kW in vacuum pressure impregnation with in temperature class H



6 MW Full Load Test Field

for Complete Drive Systems



To meet customers requirements and HELMKE' s aspiration to work always with state of the art technologies, the HELMKE Group has invested in a new testing field on its location in Pulversheim, France. The testing field is also available for final customer inspections and external testing orders.

Relevant technical data

Power-, voltage- and frequency range

- ▶ Foundation weight of 900 metric tons with reduced resonance frequency (mounting independent from environmental infrastructure)
- ▶ Maximum torque of approx. 120kNm (88.500 lbf ft) for speed ranges up to 500rpm.
- ▶ Voltage range from 400V up to 15kV (higher volt-ages possible on demand)
- ▶ Supply frequency-standard value 50/60 Hz (Other frequency values on request)

Testing foundation

- ▶ Fixing plate of 21 m x 6 m (69 ft x 20 ft) (slot T42)
- ▶ Foundation weight of 900 metric tons with reduced resonance frequency (mounting independent from environmental infrastructure)

Water cooling system

- ▶ Maximum re-cooling power of 1150kW depending on the application
- ▶ Water-quantity and pressure individually adaptable to the machines to be tested
- ▶ Possibility to supply the machines to be tested with specific cooling water quality

Application

Power-, development- and acceptance testing with reference to current regulations and standards resp. customer specific requirements:

- ▶ Motors and generators for main operation
- ▶ Drive systems consisting of transformers, frequency converters, starter and electrical machines

