Moventas Service
Lifecycle Solutions
GEARED FOR NEW ENERGY

Moventas is the undisputed innovation & technology leader in the wind gearbox industry. As a pioneer in the segment with 40 years of global service experience and an own installed base of over 15,000 gearboxes, we will make the difference in your gearbox service. Benefit of a unique industry technology leader service experience, lower your LCoE, and keep your assets running reliably.

Tight Moventas material specifications prevent subsurface inclusions which act as initiation points for fatigue and tooth fractures.
Gain a competitive edge with the Moventas digital service solutions. Get real-time data to improve your productivity and profitability.

Remote condition management

Moventas Condition Management System (CMaS®) is a state-of-the-art service installed thousands of units worldwide. Minimize downtime and costs while maximizing the lifetime of the wind turbine drivetrain.

Key features:
- CMaS® provides a real-time health condition of your drivetrain
- Installation onsite or in workshop service
- 24/7 global online accessibility with the remote diagnostics service

Dedicated diagnostic engineers monitor the equipment to identify any evolving issues. This allows for a quick response and initiation of corrective actions before any unforeseen downtime.

Expert service inspections

Standard preventative maintenance such as boroscopic inspections, vibration measurements, oil analysis, and CMaS® portable solutions are the cores of our lifecycle solutions. Receive detailed reports with clear and specific maintenance recommendations leading to lowering your O&M costs.
LOOKING BEYOND THE HORIZON

Up-tower solutions - global presence, agility, safety and speed combined with local expertise.

Moventas is setting the industry benchmark in up-tower service solutions. Smart and fast up-tower repairs are based on Moventas’ deep and diverse technology heritage, independent of any OEM.

Our innovative Up-tower repair solutions have an immediate benefit of decreasing O&M costs and operational risks while increasing reliability and availability.

With tailored working methods, special built tools and professionally trained field service experts, Moventas can complete most complex up-tower repairs within a couple of days.

Critical parts for the up-tower repair will be supplied from our global workshop network allowing for minimum lead times and local supply of the highest quality.

Our extensive know-how and 40 years of experience translates to industry innovation in up-tower service - with over 1000 completed jobs.

Smart Up-Tower Repair Features:

- Ready to go kits including all required components.
- Geared components are manufactured from Moventas clean steel which improves gear root and surface safety as well as eliminates tooth fractures.
- Tailored tools for each gearbox’s up-tower service needs.
MOVENTAS WORKSHOP SERVICE PROCESSES CONTAIN:

- **BASIC**
  - Essential component changes and repairs to return the unit back to operation.
  - Repair or replacement of damaged components + new HSS & IMS bearings
  - Bearings upgrade
  - Micro geometry improvements on teeth regrinding
  - Material improvements – Clean Steel
  - Elimination of spinning bearing outer races

- **STANDARD**
  - Technically up to the same level as original new gearbox.
  - Repair or replacement of damaged components + new HSS & IMS bearings
  - Bearings upgrade
  - Micro geometry improvements on teeth regrinding
  - Material improvements – Clean Steel
  - Elimination of spinning bearing outer races

- **EXTRA LIFE**
  - Technical improvements from Moventas ExtraLife solutions applied to original designs.
  - Repair or replacement of damaged components + new HSS & IMS bearings
  - Bearings upgrade
  - Micro geometry improvements on teeth regrinding
  - Material improvements – Clean Steel
  - Elimination of spinning bearing outer races
  - Clean steel to lower impurities + extend lifetime
  - Bearings concept modernization
  - Planetary stage modernization e.g. Integrated bearings, WEC resistance
  - Case carburized ring gear by state-of-the-art heat treatment
  - Online Condition Management System – CMaS®
Moventas’ high density of global workshops and service centers allow the shortest turnarounds at industry leading quality standards.

Extend gearbox lifetime with innovative repairs and upgrades. Gearboxes will be fully assessed from root cause analysis and innovative performance enhancing through to low cost component refurbishment techniques. Our tailored solutions are proven to be fit for purpose.

Our multi MW load testing capabilities across the global workshop network offers quality reassurance and this physical validation ensures reliable operation. At the same time, it quantifies the benefits of our advanced design upgrades.

Key Benefits

- instant access to a new or refurbished gearbox
- Reduced downtime due to quick turnaround times
- No additional crane and service team required for installation
- Single source supplier reduces the risk of damaged or contaminated accessories

Moventas Service is the only gearbox service partner that can offer superior case carburized inner gearing.
Instant access to new and refurbished gearboxes

Replacement gearboxes will lead to the shortest downtime increasing productivity and injects the latest gearbox technologies extending lifetime.

Brand new or refurbished gearbox which is ready to be shipped from the gearbox inventory.

New replacement gearboxes

Moventas’ new replacement gearboxes represent the latest in drivetrain technology, designed to meet the challenging demands of today’s wind turbine operations.

Practical expertise, state-of-the-art solutions, research and development provide you with reliable gearboxes. New replacement units are full-load tested considering static, dynamic, and extreme load conditions.

CLASSICS REBORN

Moventas offers a comprehensive gearbox pool and exchange service. A refurbished gearbox gives you an economic alternative to a new gearbox by only upgrading impacted components. Known generic failure modes are eliminated resulting in higher availability and reliability.

A result of years of evolution

• Wear-free case carburized ring wheel
• Optimized casted components
• Integrated 2-row planet wheel bearings
• Helical gears
• Optimized gearbox parameters

Exchange service solution
Genuine Moventas spare parts – high quality, short lead time, 24/7 available.

Moventas sources and supplies spare parts worldwide for most common OEMs. Availability of parts through local inventories and quick response times leads to savings in your O&M structure.

Maximize your uptime and revenue generation with Moventas spare parts.

<table>
<thead>
<tr>
<th>Spare parts from Moventas</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Genuine gearbox OEM spare parts</td>
</tr>
<tr>
<td>• Components and spare parts for Acciona, DeWind, Gamesa, GE, Nordex, Senvion, Siemens, and Vestas turbine platforms</td>
</tr>
<tr>
<td>• Thousands of high quality spare parts in stock available for fast delivery</td>
</tr>
<tr>
<td>• OEM inspected and refurbished spare parts in original configuration or upgraded to latest available solution.</td>
</tr>
</tbody>
</table>

### SPARE PARTS

**READY TO GO**

<table>
<thead>
<tr>
<th>Turbine Make</th>
<th>Turbine Type</th>
<th>Spares</th>
<th>Expert Services</th>
<th>Workshop</th>
<th>New/Refurbished</th>
<th>HSS</th>
<th>IM5</th>
<th>LSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acciona</td>
<td>AW1500</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>AW3000</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>DeWind</td>
<td>DB</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>G4X</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>G5K</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>GBK</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>G90</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gamesa</td>
<td>GE</td>
<td>15</td>
<td>•</td>
<td>10</td>
<td>New</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GE</td>
<td>NE60</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NB80</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NN90</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nordex</td>
<td>MMB2</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>MMB2</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Senvion</td>
<td>SWT-2.3</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>Refurbished</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>SWT-16</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>-</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Siemens</td>
<td>NM144-72</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V47</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>V52</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>V66</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Vestas</td>
<td>V80</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V90</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V100</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>V110</td>
<td>•</td>
<td>•</td>
<td>10</td>
<td>New &amp; Refurbished</td>
<td>10</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

OMS - Condition Management System | Service Agreements & Special Projects | Expert Services
---|---|---
 ANY BRAND | Diagnostics and analysis services | Preventive maintenance agreements |
 |any turbine and gearbox brands/refurbished in our factory | Tailored service projects |
 | | Boroscopic and general inspections | Tailored expert training |

---

SPARE PARTS

**READY TO GO**

Genuine Moventas spare parts – high quality, short lead time, 24/7 available.

Moventas sources and supplies spare parts worldwide for most common OEMs. Availability of parts through local inventories and quick response times leads to savings in your O&M structure.

Maximize your uptime and revenue generation with Moventas spare parts.
Moventas is a new energy technology expert and multi-brand service provider. Moventas’ technology strives to lower the cost of energy across the lifecycle of renewable energy generation, from superior gearbox design and manufacture to extensive after sales service for most gearbox brands. Moventas is part of the Clyde Blowers.

Read more at
www.moventas.com

Follow us on Twitter, LinkedIn and Facebook

Europe: service@moventas.com
Americas: na.sales@moventas.com