

# Up-tower recovery

**MAN PrimeServ**

**The focus on up-tower repairs in the wind energy sector is increasing, and the link between cost savings and reducing downtime is more evident now than ever before.**

When a large mechanical component is damaged, we help wind turbine operators save costs and reduce downtime by bringing the workshop

up-tower and recovering the wind turbine on-site instead of transporting the component to a workshop on the ground.

24/7 and 365 days a year, our skilled service engineers recover generator shafts, yaw rings and other large components to the manufacturer's specifications on-site.

Whether onshore or offshore, we have extensive experience in up-tower repair minimizing expensive downtime for the wind energy sector worldwide. We work closely with our customers constantly improving our repair processes and finding new and innovative tools that restore wind turbine performance.

**Our services to the wind industry include:**

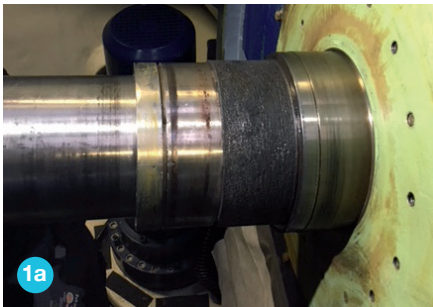
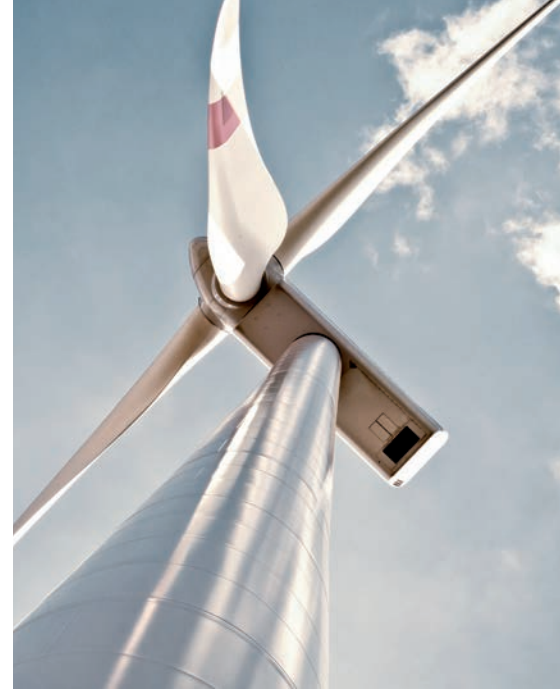
- Generator shaft recovery
- Yaw / brake disc recovery
- Tooth recovery
- Hollow shaft recovery
- Stud & thread recovery
- Flange recovery
- Measurement & alignment
- Customized recovery

As a company that thrives most when challenged, we are proud to evolve with the exciting technology in the wind industry.



# Generator shaft recovery

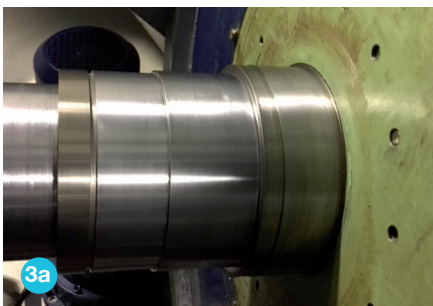
## Drive end or non-drive end



Different degrees of ball bearing seizure is the most frequent reason for damages to the generator shaft. For different wind turbine models of 2 MW and larger, we have the tools and the experience to perform up-tower recovery of the shaft.



After machining the damaged shaft, the basis material is tested for micro cracks, hardness and roughness. Finally, a pre-made bushing is shrink-fitted to restore the original dimensions of the generator shaft. Complete recovery of the shaft to manufacturer's specifications is performed in three days.



- 1a Shaft damaged by bearing failure
- 2a Shaft after machining
- 3a Sleeve fitted after machining
- 1b Part of bearing attached to shaft
- 2b Bearing partly removed
- 3b Sleeve fitted after machining

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