







# Up-tower repair: a win win situation

# Member of the Volkswagen Group




MAN Energy Solutions is part of a brand family

## Automotive Division


**Passenger Cars Business Area**


VW	
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Porsche	
Others	

**Commercial Vehicles Business Area**

VWN	 <small>Nutzfahrzeuge</small>
Scania	
MAN Truck & Bus	

**Power Engineering Business Area**

MAN Energy Solutions 

On-Site Recovery 

### On Site Recovery - Our history

<b>1952</b>	<b>2008</b>	<b>2011</b>	<b>2018 - today</b>
Established as <u>Metalock Denmark</u>	Acquired by <u>MAN Diesel &amp; Turbo</u>	First <u>wind turbine recovery</u> – <u>direct technology transfer</u>	<u>Geographic expansion</u> . <u>Tools and competencies</u> .

# Up-Tower Repair - Moving the workshop up.

## INLAND & OFFSHORE

### In-Situ Recovering of large mechanical parts.

- Generator shaft recovery
- Yaw and pitch gear teeth recovery
- Yaw / brake disc recovery
- Inspection of gear boxes
- Hollow shaft recovery
- Thread recovery
- Flange recovery
- Measurement & alignment
- NDT Inspection
- Welding uptower and tower
- Customized recovery
- Etc.



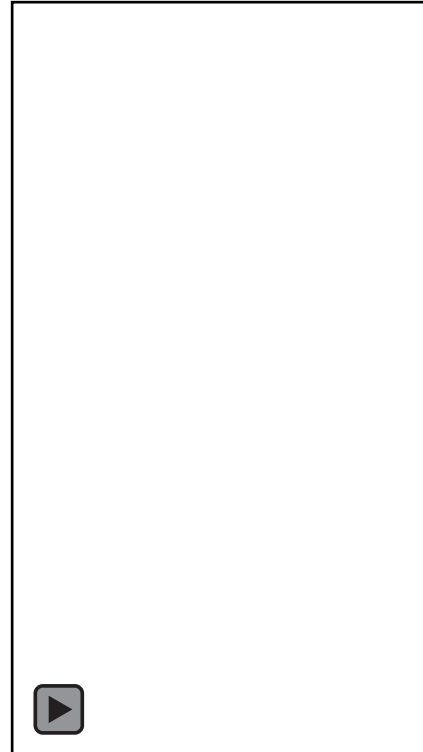
# Generator shaft recovery Example

NO HOT WORKS, NO WELDING, KEEPING EQUIPMENT SAFE.

Damaged generator shaft



Up tower - Machining of generator shaft



Recovered generator shaft after mounting of bush



**COMPLETELY POSSIBLE!**  
On-site Recovery

# Yaw Ring - On-Site Repair

CETEC  
Y



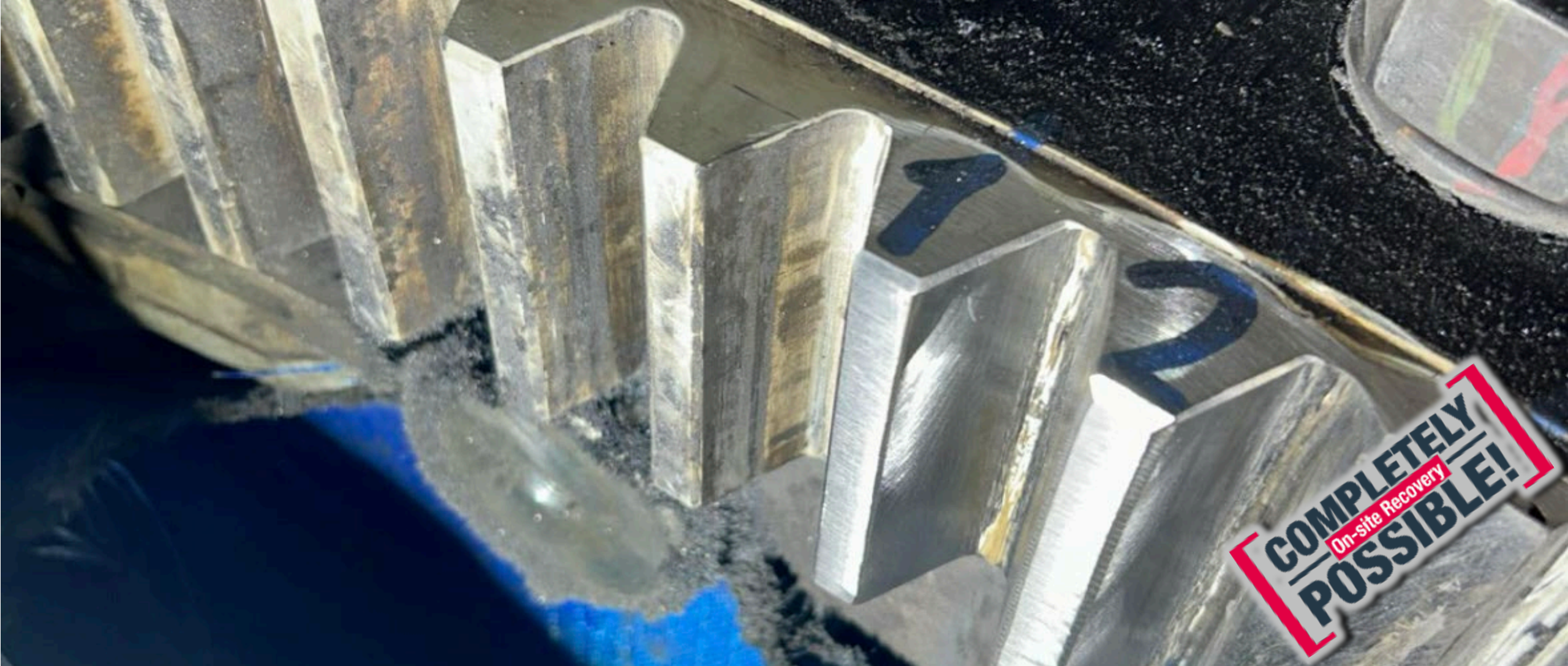
**COMPLETELY**  
On-site Recovery  
**POSSIBLE!**



# Pitch Gear



# Pitch Gear



# Customized recovery

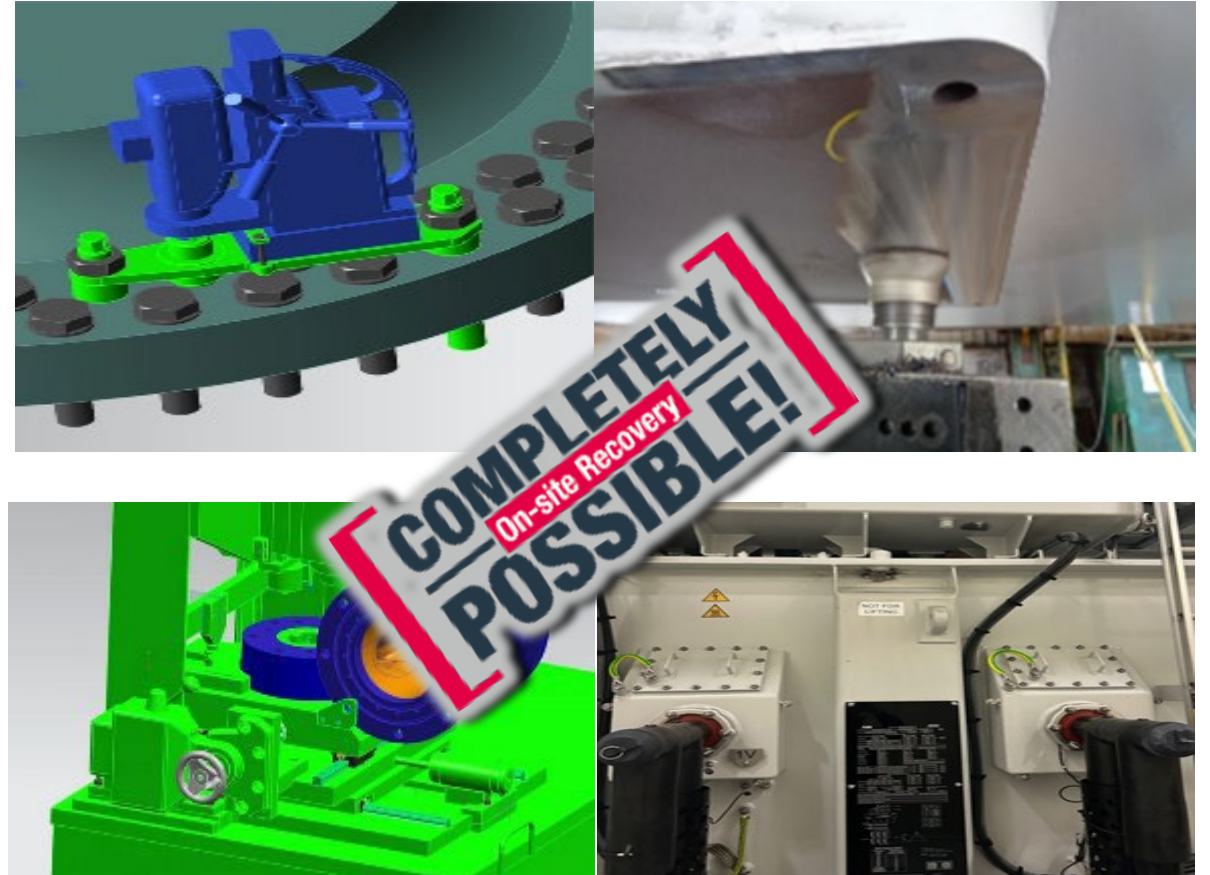
Specialized solutions for unique problems:

In-house engineering of specialized tools

- Design
- Development
- Production
- Test

On-site specialists perform the repair

- Experience
- High precision
- Test





# Benefits – Up-tower recovery

- SAFETY FIRST: Highest standards.
- Fast recovery
- Minimized down-time
- Component recovered to manufacture's specs
- Saved cost



# Contact us:

[On-site recovery for wind power \(man-es.com\)](http://man-es.com)



## **MAN PrimeServ On-site Recovery**

Sognevej 25, building 52  
2605 Brøndby

Phone: +45 4373 6620

E-mail: [osr-cph@man-es.com](mailto:osr-cph@man-es.com)

**Christian Petersen,**  
**Service Manager**

+45 5091 0083

[christian.petersen@man-es.com](mailto:christian.petersen@man-es.com)

MAN Energy Solutions Iberia

Louis Pasteur 11, nave 2  
46980 Paterna, Valencia

Antonio López  
Sales Manager

+34 662 956 149

[Antonio.Lopez@man-es.com](mailto:Antonio.Lopez@man-es.com)

MAN Energy Solutions Iberia

Calle Orense 34, 10º floor  
28020 Madrid, SPAIN

Paula Moreno  
Sales Manager

+34 671 640 418

[Paula.Moreno@man-es.com](mailto:Paula.Moreno@man-es.com)

# Thank you very much!

On-Site Recovery

**QUESTIONS?**

