

# NGC

## Wind Gearboxes

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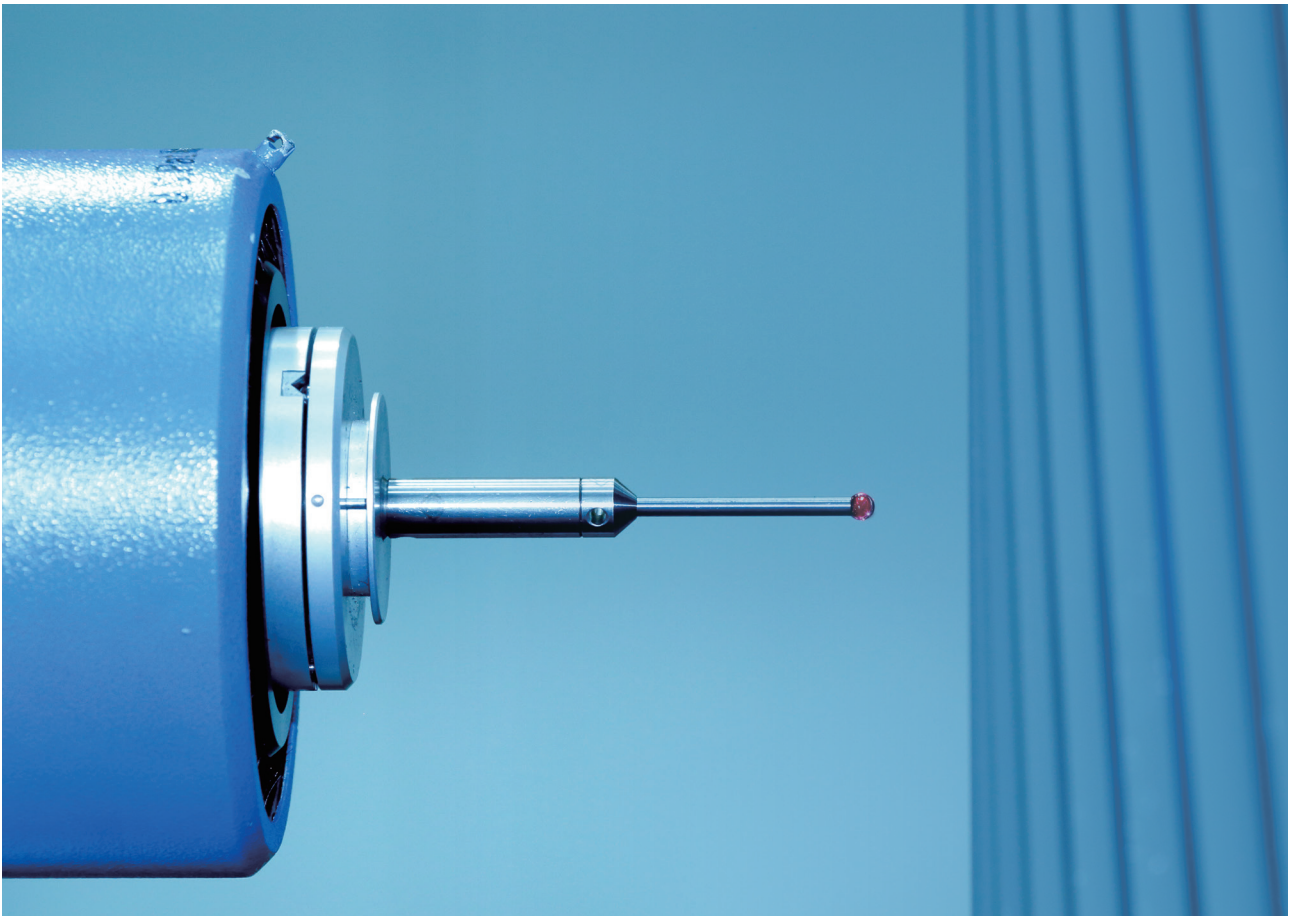
## About Us

As traditional sources of energy continue to deplete fossil fuels and pollute the environment with carbon compounds, wind energy has emerged as the most promising and sustainable alternative. As a global market leader in the design and manufacture of wind gearbox technology, NGC builds and supports the wind energy ecosystem to reduce carbon emissions and ensure future generations inherit a healthy planet Earth.

Driven by technological innovation and a zero-defect culture, NGC continuously strives in the areas of Research and Development to deliver optimized solutions for the most challenging environments. Today, more than 90,000 Main Gearboxes and 450,000 Pitch and Yaw Drives are in operation in more than 30 countries across the globe, operating in extreme temperatures, high altitudes, and offshore environments.







## NGC Advantages

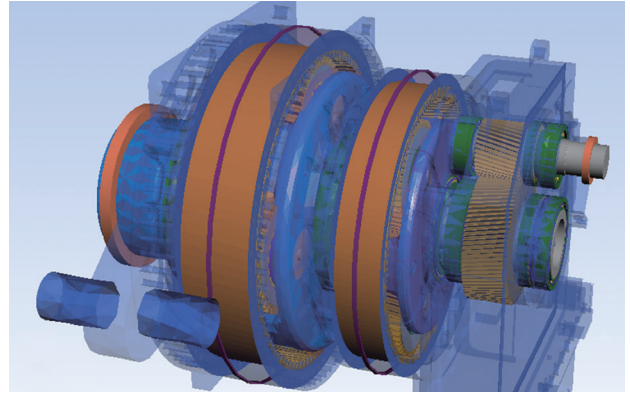
NGC integrates nearly 50 years of experience developing gears and gearboxes with the vast knowledge of our R&D centers, where our scientists and engineers work diligently to create world-class gearbox designs.

Located in China and Germany, our R&D centers perform gearbox system simulations, gear strength calculations, noise analysis, and Finite Element Analysis (FEA) of all critical components to create an optimized, reliable, and high-quality gearbox design that meets our customers' high standards.

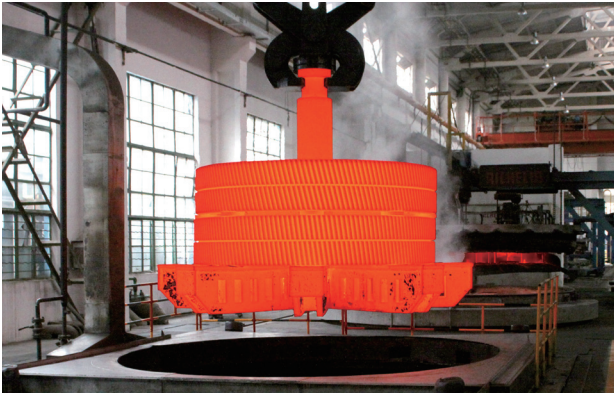




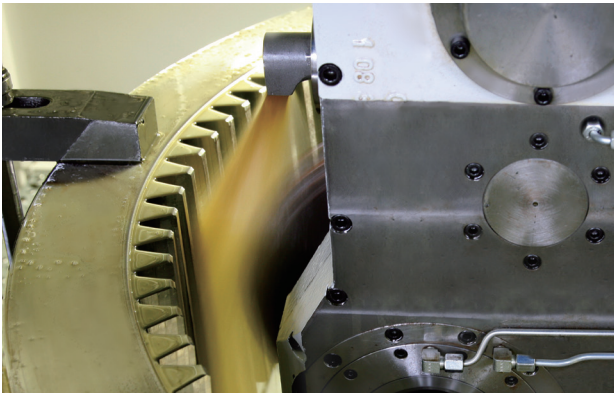
Design



Simulation



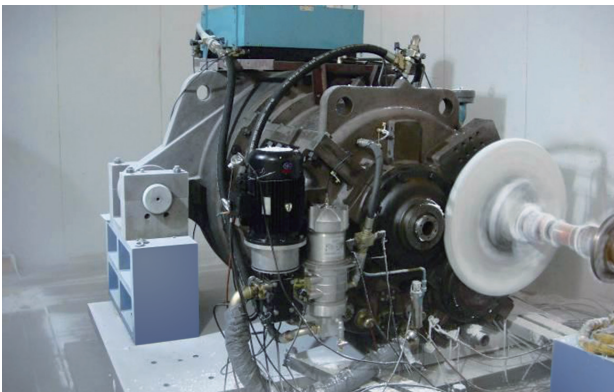
Heat treatment



Machining



Assembly



Low-temperature testing

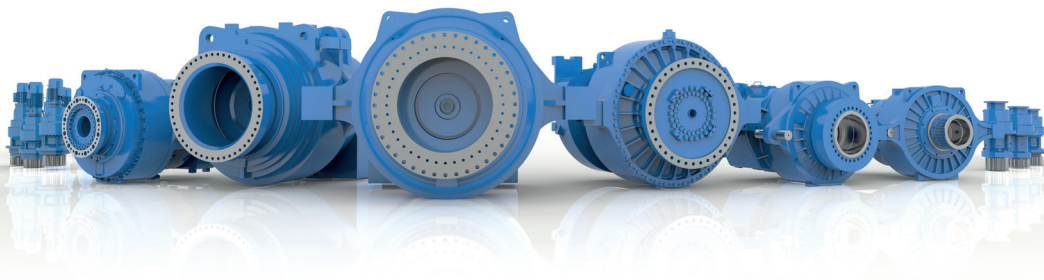


Load testing

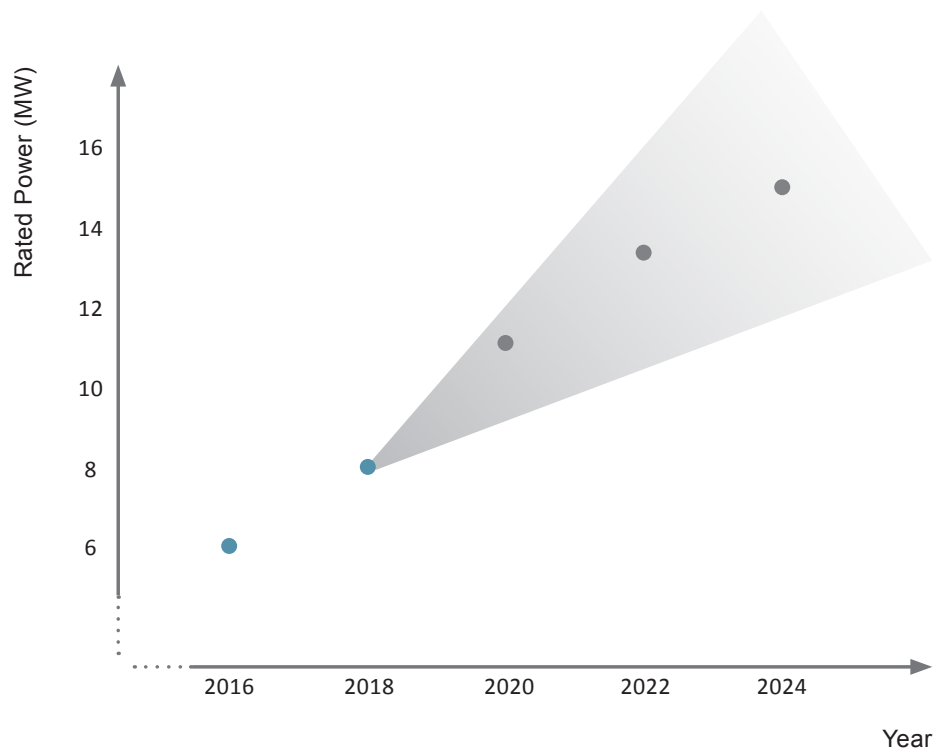
# Our Products

NGC provides Main Gearboxes as well as Yaw and Pitch Drive Systems ranging from 750kW to multi-megawatt. Our products are fully certified by DNV-GL, DEWI-OCC, TUEV-SUED, and other reputable third-party certifying bodies according to the latest market standard testing procedures.

NGC's products and system solutions are approved for both onshore and offshore applications, high altitudes (> 1000 m), as well as low temperature (-40 °C) and high temperature (+50 °C) environments.

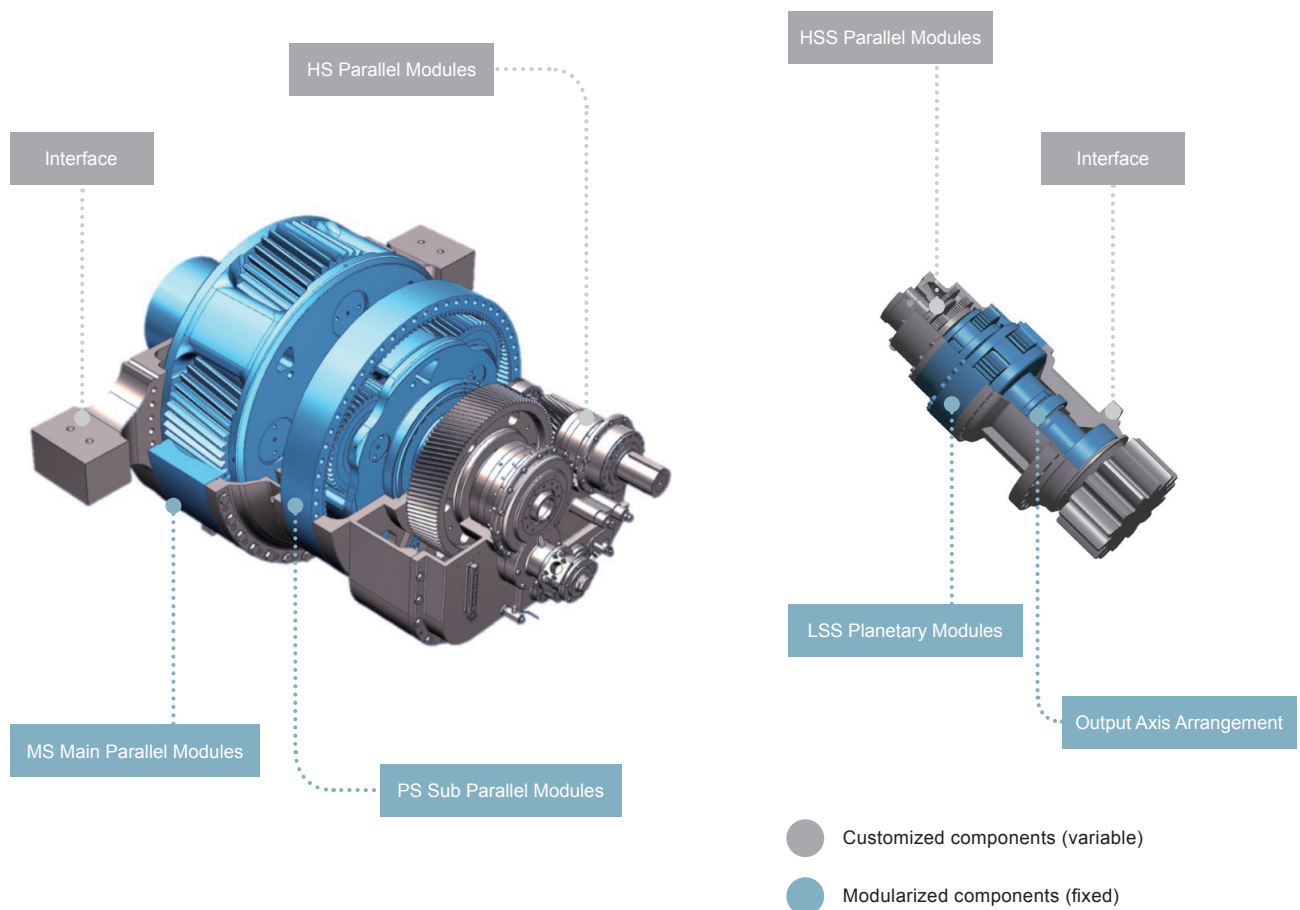


## Gearbox Size – Expected Market Demand



# NGC StanGear™ – Standardized Wind Gearbox Product Platform

As the wind energy industry continues to evolve, the market sets higher expectations of the wind gearbox regarding cost, quality, reliability, and lead time. With more than a decade of experience, proven technology, and the concepts of standardization and modularity, NGC has developed a new series of SMG main gearbox, SYW yaw drives and SPT pitch gearboxes for the NGC StanGear product platform.



## Advantages

- Easy to select
- Shorter R&D period
- Fast quotes
- Improved product maintenance

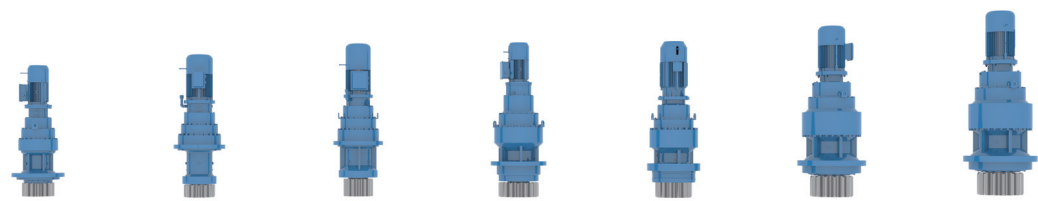


## SMG Series - Standardized Main Gearboxes



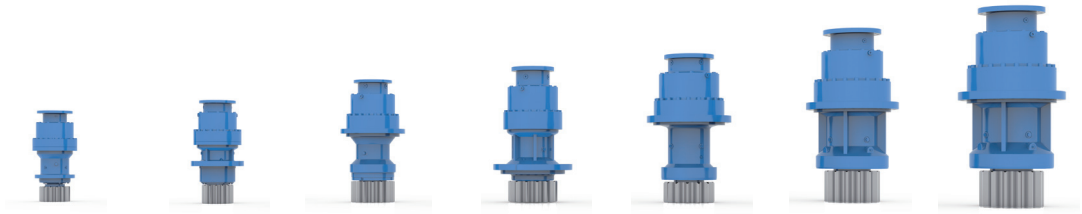
Platform	SMG16	SMG22	SMG28	SMG32	SMG38
Ratio	90 - 140	100 - 150	100 - 150	100 - 150	100 - 150
Nominal Input Torque (kNm)	1.600 - 1.800	2.240 - 2.500	3.150 - 3.550	4.000 - 4.500	5.600 - 6.300
Rotor Diameter (m)	129	140	146	147	151 - 171
Transmission Type	One planetary stage, two parallel stages		Two planetary stages, one parallel stage		

# SYW Series - Standardized Yaw Drives



Type	SYW01	SYW03	SYW05	SYW07	SYW09	SYW11	SYW13
Peak Torque (kNm)	52	72	108	138	165	235	270
Rated Torque (kNm)	15 - 20	20 - 30	30 - 40	38 - 50	45 - 60	60 - 85	75 - 100
Speed Ratio	800 - 3,000	800 - 3,000	1,000 - 3,000	1,000 - 3,000	1,000 - 3,000	1,000 - 3,000	1,000 - 3,000
Transmission Type	Four or five planetary stages						

SPT Series - Standardized Pitch Gearboxes



Type	SPT01A	SPT03A	SPT05A	SPT07A	SPT09A	SPT11A	SPT13A
Peak Torque (kNm)	18	26	38	48	66	95	120
Rated Torque (kNm)	3 - 5	4 - 8	7 - 12	10 - 14	14 - 18	16 - 20	20 - 30
Speed Ratio	100 - 200	100 - 200	100 - 250	100 - 250	100 - 300	100 - 300	100 - 350
Transmission Type	Triple planetary stages						

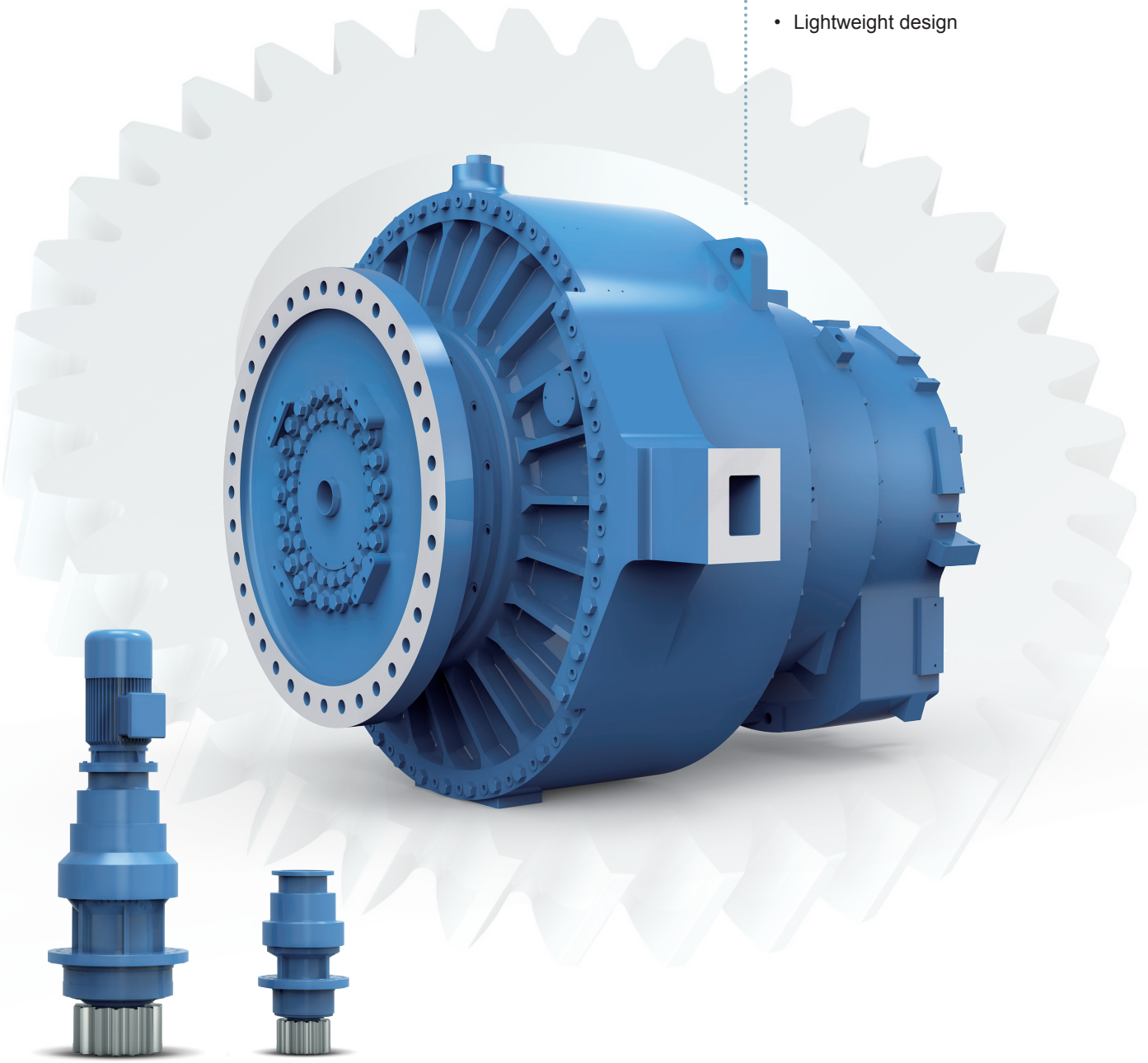


## CMG Series – Customized Wind Gearbox Product Platform

In addition to providing the standardized selection (SMG, SYB, SPT Series), NGC maintains our original customized design to satisfy the diversified challenges of our clients, including the latest technological advancements to ensure outstanding performance.

### Features

- Integrated planet bearings
- Internal pipe design
- Lightweight design



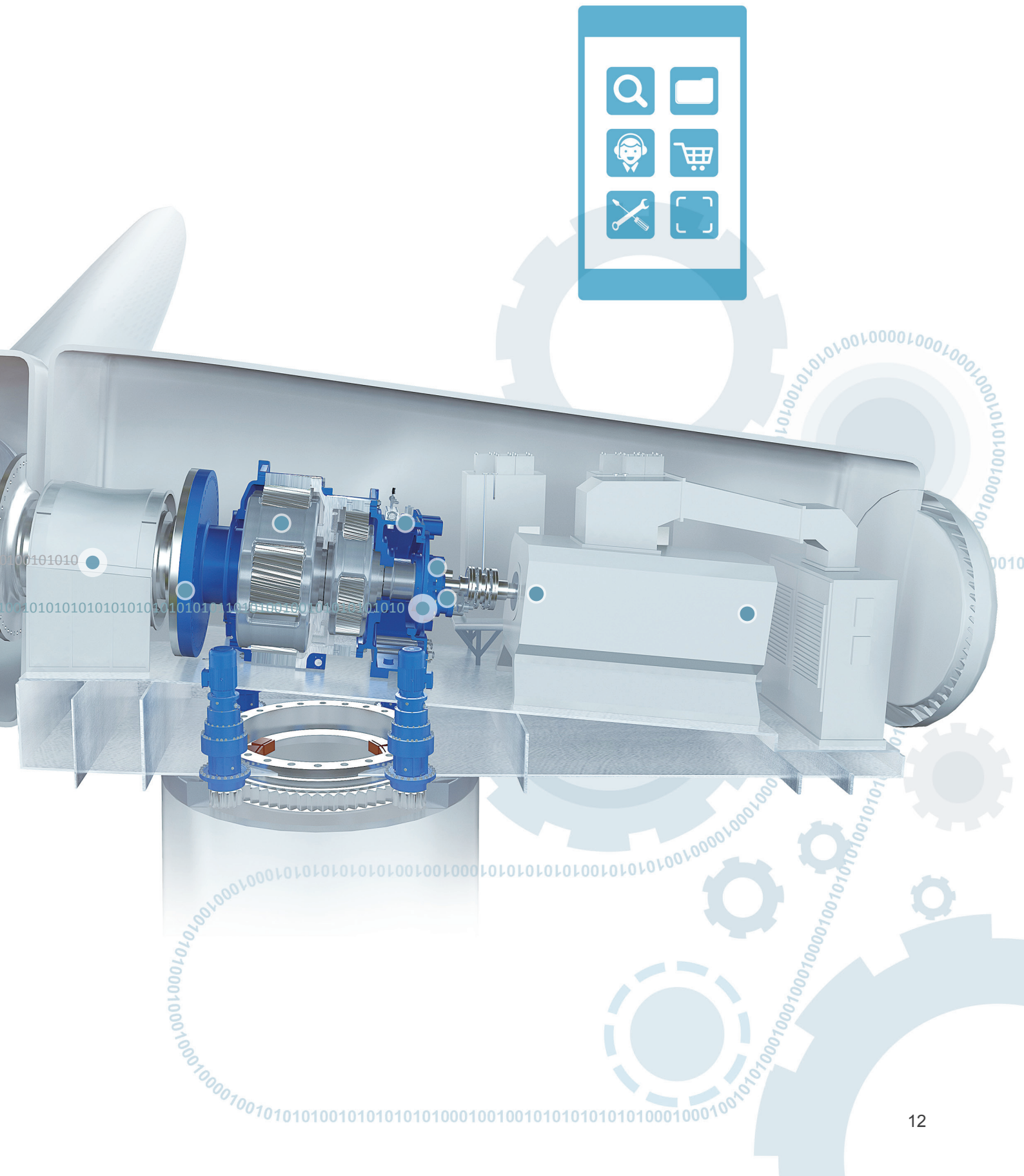
# Smart Wind Gearboxes

As a leader in the wind power transmission industry, we embrace change and lead the industry through development and innovation.

NGC combines mechanical and digital technology to provide advanced condition monitoring, cloud computing, data analysis, and internet and remote terminal technology that results in a smart gearbox system that can monitor its status.

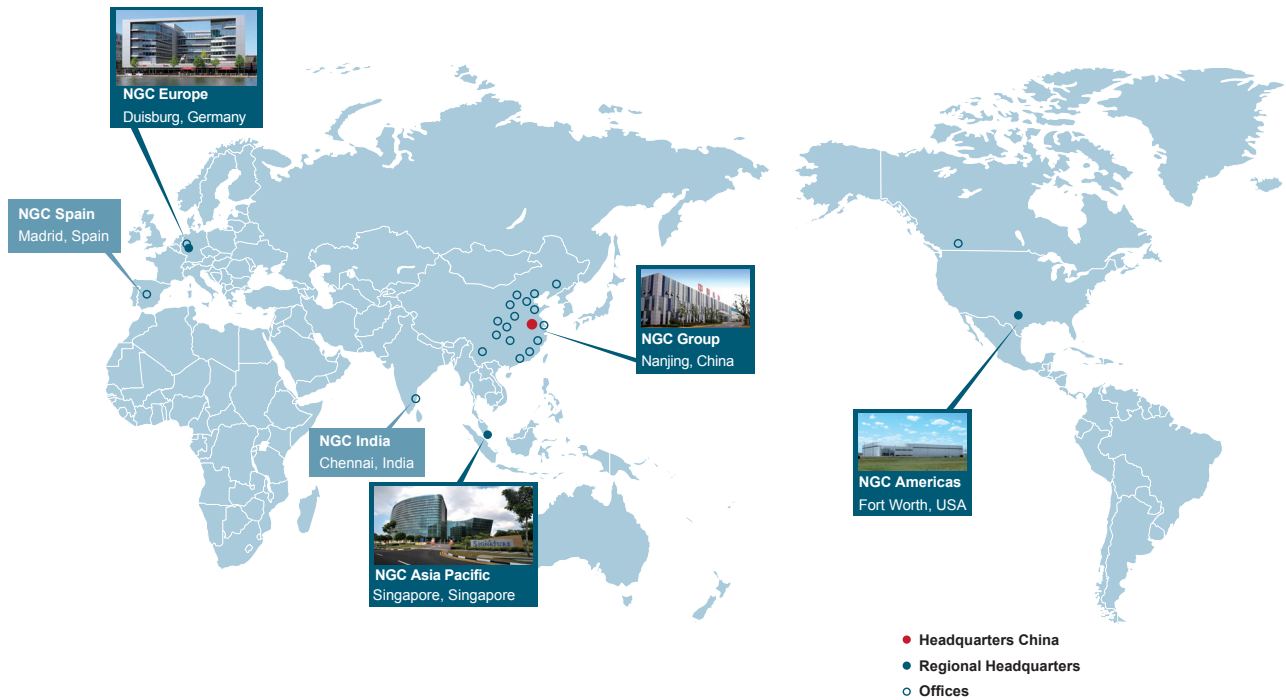
Paired with expert analysis and failure diagnosis from the team at NGC, real-time evaluation of the gearbox is realized. Early fault detection and remote diagnosis capabilities prevent issues from deteriorating, ultimately preventing power generation loss caused by a gearbox repair. These services and technologies allow for the development of repair strategies that improve wind power generation efficiency and provide overall economic benefits.







# Professional Customized Services



NGC offices are strategically located in four regions of the globe to provide easy accessibility and offer engineering and sales support to our customers.

Our Service Teams, which consist of gearbox engineers, application engineers, field engineers, and authorized service partners, provide tailored technical support. Thanks to our well-developed global service network, our customers can always enjoy optimal gearbox maintenance service wherever and whenever needed.



## Technical Support

- Global service network
- Professional and competent service teams
- Established gearbox maintenance program



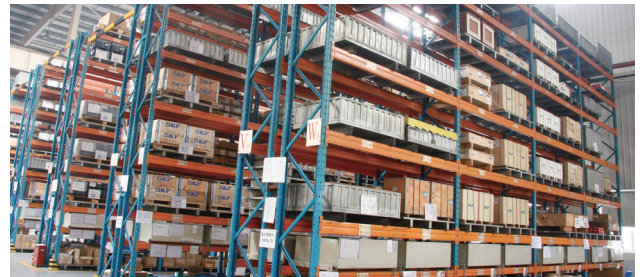
## Exchange Programs

- Covering up to 6 MW
- Fast delivery for reduced downtime



## Field Services

- Regional operating centers
- On-site testing and maintenance
- On-site oil replacement
- Up tower repairs



## Spare Parts

- High availability
- Genuine parts
- 100% traceability



## Factory Services

- Advanced testing equipment
- Comprehensive maintenance program
- State-of-the-art machinery and purpose-built facilities



## Customized Services

- Customer specific services, consultancy and re-engineering support
- Continuous upgrades of technology and models to cater to market and customer demands

## Contact Us

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