

A worker in a red hard hat and orange safety vest is using a blue Superbolt tool to work on a large, circular turbine component. The component is covered in numerous blue Superbolt Multi-Jack Tensioners. The worker is standing on a blue metal platform.

PROFILE

NORD-LOCK GROUP

A PARTNER IN SECURE BOLTED SOLUTIONS

Nord-Lock Group's Superbolt tool saves considerable time and labor with numerous Superbolt Multi-Jack Tensioners of the same size on a wind turbine. (Courtesy: Nord-Lock Group)

As a global leader in the development of engineering and bolting technologies, Nord-Lock Group has provided its customers with high-quality, safe, and innovative bolting solutions for 40 years.

By **KENNETH CARTER** ▸ Wind Systems editor

Taking care of the “nuts and bolts” in many businesses can be a metaphor for a lot of things, but for Nord-Lock Group, it’s the literal truth.

That’s because taking care of the nuts, bolts, and more that keep wind turbines standing tall and spinning is exactly what Nord-Lock Group has done for more than 10 years.

“Nord-Lock Group has tightened and secured billions of bolted connections in millions of applications all over the world,” said Sebastien Bruyas, strategic sales manager with Nord-Lock Group. “All our solutions are developed and manufactured in-house, ensuring they meet the highest standards in the industry. We are the first bolt-securing partner to offer a full life-cycle warranty across all its technologies.”

TAKING ON WIND

With that experience, Nord-Lock Group took on what it could offer the wind-energy industry to supply products and services with a focus on life-cycle profitability, design, production, training, and installation support, according to Bruyas.

“We work closely with OEMs, wind-farms owners, installation and service companies, and with all their supply chains including distributor partners,” he said. “We provide them assembly solutions or accurate and efficient tools to install and secure critical bolted connections on blade bearings, main shaft, gearboxes, dampers, generators, yaw bearing, towers, MP-PT connections, anchorages, and more.”

As a member of the APQP4WIND association, Bruyas said Nord-Lock Group fulfills the wind-industry quality standard. “We are happy to support all our customers in their quality challenge,” he said.

KEEPING PEOPLE SAFE

In order to maintain that quality, Bruyas said Nord-Lock Group’s mission is to safeguard human lives and customers’ investments.

“We believe that no one should have to question the integrity of the mechanical systems that play such a critical role in our way of life,” he said. “We are passionate about sharing our knowledge, insights, and expertise to ensure an optimal long-term solution to our customers’ challenges.”

In that vein, Nord-Lock Group’s core values include passion, speed, quality, and sustainability, according to Bruyas.

“These values are perfectly aligned with our perception of the wind industry,” he said. “We work with passionate customers searching for high-quality solutions to answer to the needs of a fast-growing, sustainable industry.”

TAKING CARE OF BIGGER TURBINES

Part of that fast-growing industry is the ever-growing as-

sets used to harvest electricity from the wind, according to Bruyas.

“The wind industry has evolved into bigger machines and larger wind farms with a strong potential for offshore,” he said. “With these evolutions, we have seen a significant shift in demand. The need to secure the supply chain (cost, availability, and quality) is high on the agenda. To meet the demand, Nord-Lock Group is constantly investing in new manufacturing equipment to increase quality, capacity, and optimize cost. We have also opened new offices around the world to provide technical and commercial support locally to our customers.”

In the meantime, Bruyas said Nord-Lock Group has seen a strong demand for maintenance and operations optimization.

“Reducing the time of installation, control, maintenance, and services has always been our goal,” he said. “It is therefore natural that we have invested in Industry 4.0 products, and today, Nord-Lock Group offers a range of innovative products in the field of preload monitoring. Imagine today that our customers can check anywhere, anytime, to check if their bolts are tight, allowing them to speed up installation, reduce maintenance and downtime, and, most importantly, avoid major incidents on bolted connections.”

INNOVATION IS KEY

Bruyas pointed out that Nord-Lock Group looks on its impressive array of innovative products with a sense of pride.

“Every innovative product we create is a great achievement for us,” he said. “We had been particularly proud of the enthusiastic feedback we received from the wind industry when the Superbolt™ Load-Sensing Tensioner (LST) and Load-Sensing Flexnut (LSF) remote control solutions were launched. Innovation is hard work and even when using the best methodology and process, you are never 100-percent sure of the market reaction. In this case, it was a ‘wahoo’ moment.”

Nord-Lock Group also has innovative solutions available for hydraulic tensioning applications. With its Intelligent Electric Pump, Boltight™ has taken its popular electric tensioning pump and added the ability to wirelessly control the tension pump. It gives its customers the ability to customize the pump’s operation and record data on the pressure cycles.

Once the joints are tightened, Nord-Lock Group can help its customers verify the joint is loaded properly with its ultrasonic measurement tool, Boltight Echometer Premier.

All that innovation that Nord-Lock Group is developing will only continue to enhance what its customers need and allows the company to be up to any challenge a customer may need solved, according to Bruyas.

“We are curious and always ready to help,” he said. “In



SeaTwirl's vertical axis turbine is fixed on an underwater gravity based structure and the full body rotates as one piece. (Courtesy: Nord-Lock Group)

the first place, actively listening to our clients is essential to identifying what the real need is before advising on what might be a good solution or approach. Our account managers, as well as our technical center, are there to help our clients qualify the project and build the business cases before making the right decision. We believe that we can really help our customers by creating a long-term relationship based on trust. And that's why it's so important to have the right understanding of their challenge from the start."

PLAYING CRUCIAL ROLES

As a recent example, Nord-Lock Group played a crucial role in a project from SeaTwirl, a company that takes a different approach to offshore wind-power generation with a vertical axis turbine fixed on an underwater gravity-based structure



Nord-Lock Group has taken on a crucial role with the SeaTwirl prototypes, delivering both Nord-Lock wedge-locking washers and Superbolt multi-jackbolt tensioners. (Courtesy: Nord-Lock Group)

reaching under the surface. The full body then rotates as one piece. The vertical axis allows the wind turbine to rotate regardless of wind direction.

With a horizontal axis turbine, the asset has to be aimed to catch the wind. That kind of yaw mechanism is not needed in the SeaTwirl turbine.



The Superbolt Load-Sensing Tensioner & Load-Sensing Flexnut offer remote monitoring and a live reading of data — all with extreme accuracy. (Courtesy: Nord-Lock Group)

What Nord-Lock Group was able to do for the SeaTwirl prototypes was to deliver both Nord-Lock® wedge-locking washer and Superbolt tensioners. The Superbolts were able to achieve a high preload in the joints, which simplified the assembly process.

Superbolt tensioners can replace conventional nuts and bolts and can increase the lifespan of bolted joints, requiring only hand tools to tighten the joints. They are ideally used in the drivetrain, before and after the gearbox, at the housing, and footing screws, all of which are continuously subjected to great force.

Nord-Lock Group has also supplied critical tooling to hundreds of wind farms around the world with its Boltight hydraulic tensioning products. The company has engineered tooling for blade connections, drivetrain mounting, flanges, and anchorages on all major turbine makes and models.

40 YEARS OF EXPERIENCE

Nord-Lock Group began in Sweden in 1982, where the original Nord-Lock wedge-locking technology that safely secures bolted joints was developed. Since then, the company's range of innovative bolting technologies and expertise

has grown to be the most comprehensive on the market, incorporating Superbolt mechanical tensioners, Boltight hydraulic tensioners, and Expander System® pivot pins.

That rich history of supplying quality products to the ever-growing wind industry will only push the company further as it looks to the future, according to Bruyas.

“This can be difficult to predict as our world is changing rapidly, and climate change must be our top priority,” he said. “In this context, the wind-power industry plays and will play a major role.”

Wind power in the renewable-energy mix will continue to be a big player, which will amplify the need for reliability, efficiency, and security, according to Bruyas. This means the industry will continue to see more smart solutions implemented such as remote-control technologies, robotic solutions, predictive models, and more.

“Our strategy is to play a major role and shape this evolution in order to be a trusted partner for our customers,” he said. “We are well positioned, and our journey has only just begun. Our future in the wind industry is exciting and promising.” ↵

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