Tailored solutions for offshore energy equipment

The offshore energy industry is challenging, necessitating equipment that is robust, reliable, and meticulously engineered to endure the harsh conditions of marine environments. Whether in oil, gas, or renewable energy projects like offshore wind, the sector's complexity demands high-performance solutions to ensure the safe and efficient execution of operations. GN Rope Fittings is a leading provider of bespoke rigging, mooring, and lifting solutions in this field. With over a century of expertise, it has built its reputation on a steadfast commitment to excellence, innovation, and safety, enabling it to meet the industry's developing needs.

Founded in 1923 as a manufacturer of small tools, GN Ropes evolved into a leading designer and manufacturer of forged engineered products for heavy rigging, lifting and mooring applications.

Equipped with state-of-the-art machinery in Nieuwkoop, Netherlands, it also holds the world's largest inventory of standard Shackles, ROV Hooks, Links and other relevant connectors.

Each product is uniquely developed, with off-the-shelf sizes ranging from WLL6.5 metric tonnes to a staggering WLL2,500 metric tonnes to meet the diverse needs of their global clients.

Unlike standard products, tailored equipment offers precision and adaptability that help to tackle project-specific challenges. GN Rope Fittings is known for delivering bespoke solutions specifically designed for the offshore energy sector to navigate challenges such as complex and exigent offshore sub-sea installation.

From initial design to in-house production and final testing, GN collaborates with clients to ensure that each product perfectly suits the project's requirements. This close partnership results in equipment that can withstand the rigours of marine environments while providing maximum operational efficiency. The thorough consultation process also ensures that its solutions meet the precise needs of each project, thereby reducing the risk of delays and ensuring that operations proceed smoothly.

A key challenge for customers is connecting products effectively. Whether linking a chain to a rope in a mooring line, or managing a special lifting product, a customized solution is ideal, providing reliable performance and ensuring maximum safety and efficiency, even in demanding offshore conditions.

The Trunnion Shackle: a game-changer in heavy lifting

Trunnion Shackle is one of the key innovations, with a Working Load Limit (WLL) of 2,800 tons. It offers superior reliability and strength, making it a vital tool for heavy lifting in offshore projects. Constructed with premium-grade materials, it is designed to withstand the corrosive nature of marine environments and extreme tension, a testament to their engineering excellence. It undergoes rigorous manufacturing processes and quality checks to ensure it meets stringent standards before it reaches clients.

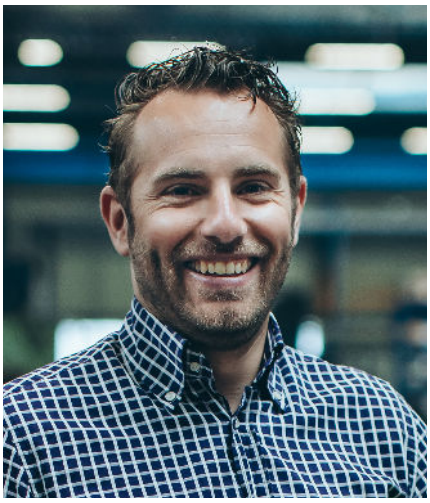
Furthermore, its optimized design facilitates easy installation and removal during offshore operations, saving valuable time and increasing overall project efficiency. This extends the shackle's longevity, reducing maintenance needs and replacement frequency, thereby offering long-term cost savings for clients.

The trunnion shackles are developed to increase lifting height during piles installation which limits the need for a standard triangle plate, shackles and links configuration offering a 2/3/4 leg rigging arrangement.

Julianna Iris Tan, GN Global Business Consultant, captures the company's forward-thinking commitment: 'In an ever-evolving industry, staying ahead requires more than just keeping up, it demands a commitment to continuous innovation. At GN Rope Fittings, innovation is not just a buzzword, it's at the very core of their values.'

Pushing boundaries with world's largest shackle: WLL 3,000T

The first WLL2,000T Shackle was made in the 1990s. GN has maintained a 0% failure ratio due to heavy investment in research and development. Continuing its legacy of innovation, the introduction of the world's largest forged shackle, featuring a Working Load Limit of 3,000 tons demonstrates a significant advancement in the offshore energy sector. This product addresses the growing demand and opens new possibilities for offshore operators, allowing them to undertake more complex and larger-scale projects with enhanced safety, and efficiency.



Bart Vossenburg Jr

Additionally, shackles are engineered to function within defined temperature thresholds. They can operate at absolute Working Load Limit (WLL) at temperatures up to 200°C. As temperatures rise to 300°C, the WLL is reduced to 70% to account for the increased stress on the material. Further rise in temperature, from 300°C to 400°C, results in 50% of the WLL. This impressive load-bearing capacity is particularly valuable for lifting massive subsea equipment, and extensive projects such as deepwater oil structures and offshore wind farm substations.

These structures often require precise handling solutions that standard equipment cannot provide. Beyond 400°C, the use of shackles is prohibited, as operating at such extreme temperatures compromises their structural integrity and safety.

'For decades, GN Rope Fittings has been producing, lifting and mooring connectors for the oil & gas industry. Today, as we gradually transition into offshore wind energy, the company is poised and ready to ensure that we continuously innovate our solutions, especially with the expansion,' emphasizes Marc van den Broek, Senior Mooring Specialist.

As part of its growth strategy, the recent expansion in GN manufacturing capabilities, which added 5,280 square meters to its production space allows it to integrate cutting-edge technology into its operations. This enhances production capacity, streamlines the process and aligns with the offshore industry's environmental sustainability.

Bart Vossenberg Jr underscores this: 'Our commitment to sustainability is not merely a response to industry trends; it is an integral part of our corporate ethos. We are integrating energy efficient technologies and renewable resources into our operations, exemplified by our recent installation of solar panels. Additionally, we are eliminating corporate gifts to minimize waste, and our catalogues will transition to a fully digital format moving forward.'

In line with these efforts, GN actively commits to sustainability. The installed solar panels across approximately 7,000 square meters of its facility's roof are expected to generate around 615 MWh annually, enough to meet 60% of the company's energy needs equivalent to the electricity consumption of 220 homes. Significant research and investment have gone into developing an innovative system that captures and reuses the heat generated from the forge to warm up the factory and offices during winter months.

According to the Global Wind Energy Council (GWEC), offshore wind installations reached a record high in 2022, with over 21 GW of added capacity. This growth is supported by advancements in heavy-lifting equipment like those offered by GN Rope Fittings, which are critical for installing larger turbines and deeper water foundations.

With three generations of forging know-how, GN Rope Fittings remains a trusted partner for offshore operators worldwide.

GN Rope Fittings plays a vital role in the offshore energy sector that extends beyond production. It is deeply committed to tackling complex challenges, enhancing safety and efficiency, and promoting sustainable practices within the industry. With products such as the Trunnion Shackle WLL 2,800T and the world's largest 3,000 ton shackle, GN is well-equipped to remain at the forefront of innovation and environmental responsibility in the field.

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