

The little giants of tower and foundation production

The BIG 5 alliance defies all odds without compromising on quality or expertise. This bold coalition, featuring LINSINGER Maschinenbau GmbH, MIBA Group, HAEUSLER AG, ENABL A/S, and partners, unites decades of expertise to transform manufacturers' production efficiency, enhance their competitiveness and reduce the levelized cost of energy.

Producing wind turbine towers and foundations is no small feat; it requires intricate processes, specialized skills, and state-of-the-art technology.

Imagine a tower and foundation manufacturer building a tower factory relying on specialized suppliers for plate fabrication, welding, handling systems, and others. With these suppliers working independently, the manufacturer struggles with coordinating meetings, aligning custom solutions, integrating diverse systems without a unified interface, and managing stages without a clear strategy.

Delays or technical faults in one stage can stall the entire production, leading to prolonged delays as suppliers operate in silos, each focusing solely on their part. As a result, what should be a coordinated effort becomes a

challenging ordeal, leading to decreased efficiency for the manufacturer.

No compromises, just expertise: an end-to-end solution for the whole production value chain

The challenges faced in tower and foundation production, with fragmented processes and isolated suppliers, led to the creation of the BIG 5 partnership three years ago, composed of industry leaders such as LINSINGER Maschinenbau GmbH, MIBA Group, HAEUSLER AG, ENABL A/S, and partners. It delivers comprehensive factory setups and upgrades that address current and future market demands, including the next generation of turbines, offering an integrated approach rather than disconnected efforts from separate co-suppliers.

The alliance stands as the most feasible alternative in the industry. While competitors offer a fixed concept, the consortium chose innovation and tailor-made solutions, uniting independent companies that specialize in individual parts or stages yet comprehend the entire value chain through their expertise.

'The BIG 5 stands as the perfect solution to future proven industry challenges, combining its expertise for highest efficiency or effectiveness of all single processes,' shares Michael Steinkogler, COO at LINSINGER.

There's no exaggeration in saying that with this partnership, customers are in the safest hands. Backed by renowned companies with substantial industry positions and impressive turnovers, LINSINGER at EUR 100 million, MIBA at EUR 1.2 billion, HAEUSLER at EUR 50 million, and ENABL A/S at EUR 120 million, these industry experts lead the charge.

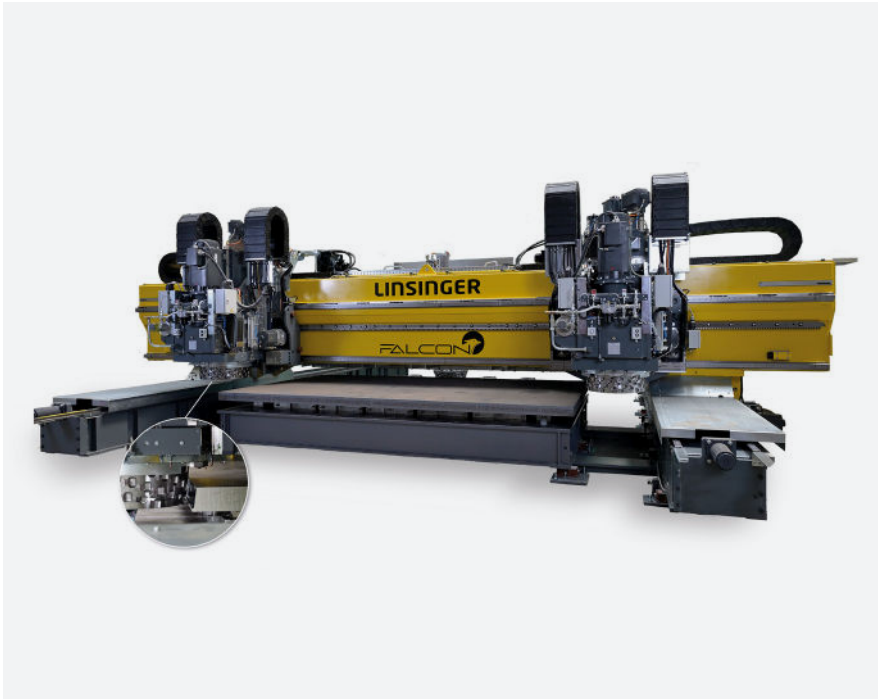
By merging their strengths, they deliver a comprehensive solution that synchronizes the entire production value chain and maximizes performance, ensuring each component process is operated at its peak.

And yet, despite their size and expertise, these 'little giants' remain approachable and ready to engage. Customers can feel assured as they work through the production process, knowing they can easily communicate with each expert partner and leverage the full range of skills and solutions that the BIG 5 offers to meet every need and fill any gaps.

'The concentration of several specialists on a common goal gives our customers the added value they need to be internationally successful in this competitive environment. Here too, no individual solution is as strong as the result achieved as a team,' asserts Klaus Hoerlin, Sales & Projects at HAEUSLER AG Duggingen.



High-performance welding system with the latest saw technology



PFM Falcon, 4-side plate edge milling machine

Expert solutions for efficient production

The BIG 5 transforms challenges into opportunities with its comprehensive turnkey solutions for wind tower and foundation construction, offering everything you need as if it were under one roof. Their services include state-of-the-art plate prefabrication, advanced plate bending machines, precision seam milling machines, cutting-edge welding technology, highest quality shell rerolling, and efficient production and handling equipment.

Klaus Weberndorfer from MIBA Group highlights that every partner company is a market leader in the mentioned fields. 'BIG 5 customers receive the best solutions for every production step, with no compromises in quality, efficiency, or service. Together, we can offer first-level support to our customers in every region, and in many cases, even provide local-to-local support.'

Beyond the individual strengths of its members, the partnership stands out for its integrated project management, providing a single point of contact to ensure seamless coordination across all aspects. It delivers tailored solutions that fit together cohesively for effective results while optimizing system connections with clear interfaces and well-defined technological integration among all partners.

Using high-quality European equipment, the partnership enhances production efficiency and ensures rapid lifecycle service through global service centers and a single point of support for quick assistance. With a strong focus on maximizing productivity, it consistently delivers optimal performance and output.

This consolidation also reduces the need for multiple supplier meetings, simplifying the process for customers. 'We used to face challenges in addressing all production setup questions thoroughly. Today, with the BIG 5 alliance, we have the complete picture and work together to solve industry pains efficiently,' says Thomas Thyssen, Sales Director at ENABL.

Its value-adding process encompasses critical stages including plate preparation, shell production, growing line, final assembly, and conservation and finishing. Each expert contributes significant value in their respective areas of expertise, ensuring excellence throughout every phase.

Mastering tower and foundation production

The BIG 5 alliance pulls together unmatched expertise in tower and foundation production, optimizing every stage from plate preparation to final assembly, and conservation and finishing. With each expert contributing to their domain, the alliance ensures a seamless and efficient manufacturing process.

High-precision plate preparation

Kicking off the production journey, LINSINGER brings its advanced milling technology to the table. In the demanding world of offshore wind tower foundations, precise plate edge preparation is critical for high-quality welding. Its FALCON edge milling machines guarantee exceptional precision, handling various complex shapes and non-magnetic materials with ease.

They combine robust engineering with efficiency, ensuring that every prepared plate meets the highest standards of the industry. As we move from plate preparation, HAEUSLER takes up the baton.

The right bending machines

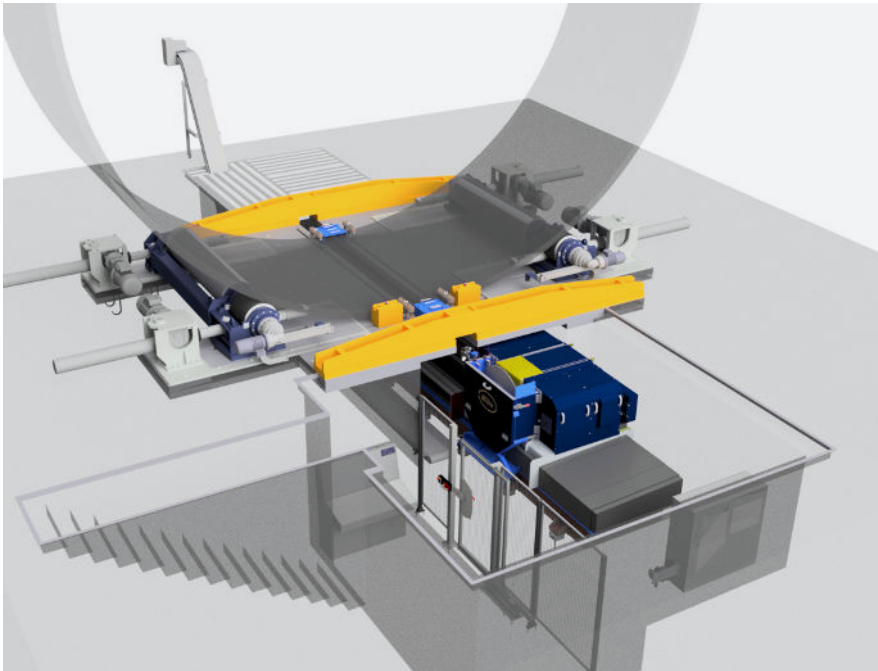
Successful in forming technology for over 80 years, Haeusler offers the perfect setup of robust forming technology paired with safe and efficient material handling systems. HAEUSLER offers customized, flexible solutions that can be adapted to any wind project. With its 3-roll and 4-roll bending machines, it expertly processes sheet metal into perfectly formed shells, whether for towers, piles, or jackets.

The brand's ability to transform sheet steel into critical components lays the foundation for the highest quality and efficiency in the subsequent production steps up to the finished component. From shell production, MIBA steps into the spotlight.



VRM NEO, 4-roll plate bending machine

By focusing on efficiency, quality, and competitiveness, the BIG 5 not only meets but exceeds current demands, placing clients at the forefront.



Long seam milling machine

High-performance milling solutions

Known for optimizing weld seam preparation, MIBA tackles shell production, growing line, and final assembly stages with precision. Its machines are powerhouses, ensuring maximum performance even in harsh environments. Using advanced technology, MIBA produces perfect milling contours for seams, delivering efficiency that reduces operating costs. Its long and circ seam milling machines safeguard accuracy with robust construction, providing the backbone for safe and efficient production.

Comprehensive production and handling solutions

ENABL rounds off the production process with its state-of-the-art equipment, such as heavy-duty rotators, fit-up systems, and handling and welding equipment. Catering to a range of structures, it provides the muscle to move through the final phases of production with precision.

Its equipment supports the highest safety standards, integrating seamlessly into existing systems to offer unmatched operational efficiency. With high-capacity support, the

company ensures each component is handled expertly, facilitating a flawless finish.

With the BIG 5 handling each stage, clients are assured of a streamlined, efficient production process that underscores the expertise and collaborative strength of this remarkable alliance.

Ready for the present and future

The partnership has proven itself a transformative force in the tower and foundation industry, turning complex challenges into remarkable opportunities. With high-end quality projects and products that boast extended lifespans, the coalition significantly reduces the levelized cost of energy (LCoE). By focusing on efficiency, quality, and competitiveness, it not only meets but exceeds current demands, placing clients at the forefront.

Now as power players in tower and foundation production, the BIG 5 defies expectations without compromising expertise, proving they are no longer underdogs.

We invite industry professionals and stakeholders to connect with us at WindEurope's Annual Event in Copenhagen from April 8th to 10th at Hall C4, booth B40 & Hall E, booth E 70. Discover firsthand how this partnership is shaping the future of wind towers and foundation production.

www.linsinger.com

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