Machine driven thinking

As turbines grow, so too do the costs of machining to place and maintain them. Time then for us to catch up with Michael Steinkogler, Chief Operating Officer at Linsinger, to see if business is booming as the market for wind power skyrockets.

PES: Welcome back to PES Michael. Things are developing at a very fast pace in the industry, how have things been for Linsinger since we last spoke?

Michael Steinkogler: Thank you very much. We are pleased that the latest efforts and developments of Linsinger are bearing fruit at this stage and that we have already had some important success.

A few months ago, when Linsinger started to develop new machines to meet the increasing requirements in the construction of wind tower foundations, in particular monopiles, it was clear that our 80 years of experience in special machine construction is particularly sought after. After all, safety is paramount.

Decades ago, production standards in the pipeline industry or in shipbuilding were developed, setting out the quality requirements for the weld seams and weld seam preparation. Ever since, safety standards have continued to rise and we have had to keep pushing the development of special machinery, in order to remain our position as the market leader for edge milling machines for precise weld seam preparation.

PES: Why is your machinery becoming more and more important?

MS: Offshore wind power is probably one of the most competitive market segments at the moment. The current suppliers of foundations and towers can hardly cover the increasing demand and still have to bow to enormous price pressure. This quickly raises important issues, such as cost savings in manufacturing.

The investments today result in ongoing operating costs later. The sooner the potential for savings in production costs is recognised, the sooner a decisive price advantage for one's own product can be achieved.

PES: How has this impacted your business?

MS: Now that many producers have sufficient empirical values, our customers increasingly know where they are losing the most money in production. This development makes us a very sought-after discussion partner, as we can present new approaches to solutions and demonstrably contribute to cost optimisation. This has led to a boom at Linsinger and we are happy to serve not only as a machine supplier, but also be noticed as a consultant.

PES: What are some of the solutions you now offer to meet changing needs?

MS: Wind towers are rocketing into the sky. The dimensions of the components of an offshore wind tower are now reaching dimensions where knowledge in special machine construction is required.

Steel plates to produce monopiles will soon reach 200mm and in order to be able to carry out cost-effective machining, such as weld seam preparation, high milling performance is required from the machine in combination with a specially developed milling tool.

Since we have in-house tool development and production in addition to machine construction, we can offer a perfectly tailored solution to our customers.

We have also formed a group of established machine builders from the DACH-region, which means that complete production lines can now be offered. After all, you can only work successfully if you have the best experts in your fields at your side. Therefore, under the name BIG4, we work closely together with international well-known companies for roll bending machines, groove milling machines and UP welding technology.

PES: A highlight of your offering is the Falcon 4-side plate edge milling machine. Can you detail this for us?

MS: Yes. The Falcon edge milling machine is an essential component of a modern monopile production line. Sheet metal plates with dimensions of up to 45,000mm x 4,200mm x 200mm can be precisely pre-milled to a nominal dimension before rolling in, so that the pipe segments fit together exactly in the 'growing line'.

These highly precise length tolerances allow the pipe segments to go directly into the growing line after rolling and welding, without having to wait until the next matching pipe section diameter has been completed.

Therefore, there is no need for extensive prefabrication and no corresponding storage space for the pipe segments. In addition, the cones can also be milled to the required size, without any problems and are also sent directly for further processing.

PES: How does it work and what are the main benefits of this machinery?

MS: Our machine stability with vibration-damping components in combination with the most powerful milling drives allow the highest milling output and perfect accuracies. The more a machine tool is protected against vibrations, such as those that occur during milling, the more noticeable are the reduced costs for milling tool wear and the associated machining costs.

Michael Steinkogler

The machine's longevity is also extended enormously as a result. Some of our milling machines have been in operation since 1970 and our customers are still pleased to have chosen a Linsinger milling machine back then.

Our self-built gearboxes also make a significant contribution. Where others use off-the-shelf drive spindles, we developed our own special gearboxes to absorb the enormous milling forces.

In addition, we use an onboard measuring system to record the position of the plates and, in combination with the globally established Siemens CNC machines with integrated PLC control, the sheet metal plates can be prefabricated exactly to size. This enables us to achieve length tolerances of <2mm for 30,000mm sheet lengths.

PES: Is this the first of its kind?

MS: Yes indeed. The Falcon does resemble conventional portal milling machines on the outside, but it has been adapted to meet the requirements of our customers. This development is based on the latest heavy-duty machining and yet presents itself in a lightweight and flexible SlimFit tailor-made suit.

The overall concept of the Falcon edge milling machine with its innovations represents the absolute top in edge milling. We are therefore pleased that three machines with a machining length of over 45,000mm will soon be on their way to our customers.

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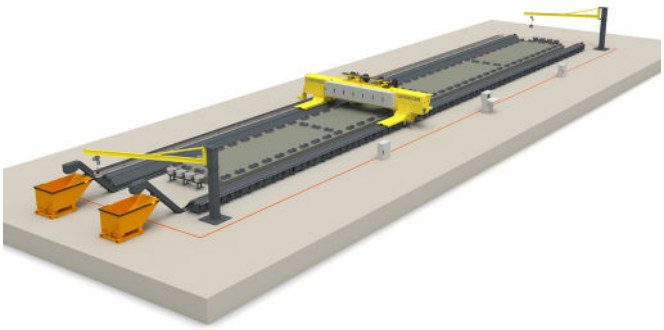

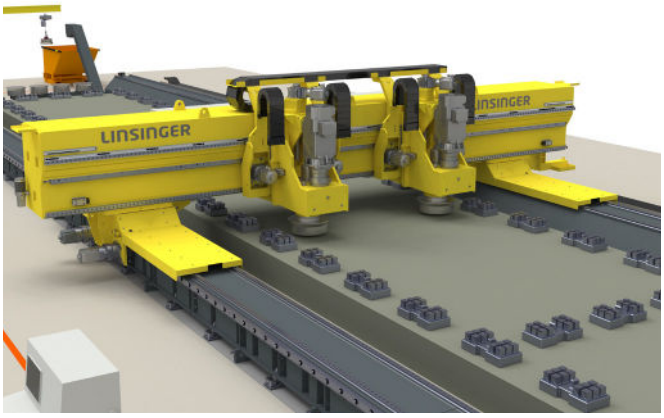

PES: How does this kind of technology help to keep costs low, while at the same time also catering for turbines as they grow in size?

MS: As mentioned earlier, it is usually not the investment costs that are the greatest burden, but the running costs that drive up production costs the most. Therefore, the larger the turbine, the higher the production costs.

The tool costs of a milling machine, for example, can in the worst case exceed the investment costs of the actual machine in the first year alone. This must be prevented and can be done if one understands how machines and tools work together best and most economically. This is the core competence and promise of Linsinger

Now, there is also the advantage of the milled edge that milling profiles can be created here that are not possible with alternative methods. No other system in weld seam preparation can produce a J-profile, or tulip profile. This J-profile can be used perfectly in the narrow-gap welding technique and also avoids an investment-intensive plate turning for the welding process.

Narrow-gap welding technology, in turn, can reduce the consumables used in welding to a minimum. However, we are happy to explain further details in joint discussions as the BIG4 with our customers.

PES: Are there any other innovations in the pipeline that you can tell us about?

MS: Absolutely. It’s best if you follow us on our social media channels to keep up to date with our latest innovations.

PES: It’s hard to predict the future of course, but what do you think the wind industry will look like in say five and then ten years time?

MS: The last two and a half years have shown that today’s predictions can be obsolete in just a few months. We are experiencing a time of rapid change and one can only hope that in the end reason will prevail and humanity will choose the right path. If that is the case, I look forward to a positive future for alternative energies such as wind power. By no means have we exhausted all the green energy potential for meeting our energy needs.

PES: And for Linsinger, can you reveal any plans for the future?

MS: As a company, we cannot look back on more than 80 years of history if we have not set a long-term course. Consequently, we continue to develop and pursue long-term and sustainable strategies in addition to short-term goals.

In the last few years, we have restructured many things and are convinced that we are on a good footing for the next stages. One of the most important plans is already being implemented, where we are expanding worldwide to be able to show our customers even more proximity. But the growing area of digitalisation is also being increasingly integrated and successively expanded. Our latest product, the LINvision helmet, can already support our customers audio-visually in real-time.

www.linsinger.com

Who is BIG4?

The following companies are part of BIG4:

Linsinger Maschinenbau: edge milling & plate jointing technology
www.linsinger.com

MIBA Automation: groove milling technology
www.miba.com\specialmachinery

Haeusler AG Duggingen: roll bending technology
www.haeusler.com

Special Welding Equipment partner, Germany