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Key to energy transition: TII SCHEUERLE develops ultra-light side girder deck for Spedition Kübler

In close collaboration with Spedition Kübler, TII SCHEUERLE has developed a side girder deck that, by means of specially designed couplings, has been specifically made for the transportation of transformers. Thanks to its low dead weight, the STB 320 can achieve axle loads of twelve tonnes with a payload of 320 tonnes when using the largest combination. This reduces approval time and effort for the heavy-load logistics provider as complex and expensive bridge recalculations and inspections are no longer necessary with such low axle loads. As a result, this makes the new SCHEUERLE side girder deck a milestone in heavy transport and a key tool for the energy transition process.

Heavy-duty transport is essential for the energy transition sector and securing the supply of electricity. It is an indispensable means of transportation; for example, when forwarding transformers which are the core elements of the electricity infrastructure. But Germany's dilapidated roads and bridges pose major challenges for heavy-load logistics specialists such as Spedition Kübler from Michelfeld-Erlin. Due to the high unit weights of the loads, previous modular transport combinations achieve axle loads of significantly more than 14 tonnes – too much for bridges that are normally only allowed to be driven on with an axle load of twelve tonnes. The costs for approval procedures are high and transport can become enormously expensive and delays occur due to detours and additional bridge recalculations.

Working closely together, Spedition Kübler and TII Group subsidiary, TII SCHEUERLE, the industry expert for heavy-duty on and off-road heavy transportation, have developed an ultra-lightweight side girder deck which includes new axle modules for the transport of transformers with the aim of significantly reducing axle loads. While Kübler contributed its extensive practical experience to ensure that the side girder deck and axle lines meet current and future challenges, the experts at TII SCHEUERLE used innovative manufacturing techniques and new materials to significantly reduce the weight of the STB 320. It weighs around 50 tonnes less than before thus reducing the axle load by more than two tonnes. With a payload of 320 tonnes and axle loads of less than twelve tonnes, it has set new standards in the industry.

Focus on transformer transport plus innovative design pave the way to low dead weight

In contrast to conventional solutions, which are often designed for a wide range of applications using universally applicable but therefore heavy equipment, the new SCHEUERLE side girder deck is specially designed for the transport of transformers as well as for maximum load capacity with minimum weight. The configuration of the modular platform vehicle allows, for example, all axle combinations from 9+9 through to 22+22 whereby 18+18 axles plus, the load is positioned above the axle lines. In addition, TII SCHEUERLE has been able to weight-optimised bridge structures through the use of innovative technologies and new materials. A key feature is the newly developed, particularly compact **slewing ring** and a load distribution frame integrated into the chassis of the central bogie unit. This eliminates the need for additional, heavy load distribution frames. Self-supporting transformers can be suspended directly into the bridge up to a support length of 12.5 metres which corresponds to a

combination configuration of 15+15 axle lines. Thanks to the large stroke of the side girder deck, it is also possible to extend the combination with additional axle lines in order to further reduce axle loads. This results in a previously unattained ratio of dead weight to payload.

Kübler and TII SCHEUERLE are also breaking new ground in terms of operating concepts and occupational safety. The new damping system for the lateral support of the lifting lever contributes to this, as does the use of an electronic braking system (EBS) and the increased stability due to a larger track width. "These measures result in optimal working equipment that TII SCHEUERLE has tailored precisely to our requirements," explained Felix Mangold, Technical Director of Spedition Kübler. Companies in the energy sector have also recognised the need for such transport solutions for the energy transition. Electricity grid operator, TransnetBW, is monitoring the use of the innovative transport solution as part of a study and has also secured preferential access to the new vehicle.

Premiere of the SCHEUERLE STB 320 at the end of March at Spedition Kübler

At the end of March, the heavy-load logistics professionals from Spedition Kübler, together with the industry experts from TII SCHEUERLE and in the presence of Heinz Rößler, Managing Director of Spedition Kübler, and Susanne Rettenmaier, Associate Partner of the TII Group, gave a live demonstration to the transport company's customers as part of a workshop. During the event, they also highlighted the importance of heavy-load transportation for the energy transition sector and explained the improved operating conditions provided by the innovative SCHEUERLE side girder deck, the challenges posed by the condition of the road infrastructure along with the requirements of a freight forwarder for the related transport solutions.

Photos



Key to the energy transition: The ultra-light SCHEUERLE STB 320 enables efficient transport of heavy transformers thanks to low axle loads – even across aging bridges.



Efficient, lightweight, powerful: The new STB 320 cuts tare weight by 50 tonnes – the result of innovative materials and smart engineering.



Safe transport, even under tough conditions: The STB 320 impresses with outstanding stability, a modern damping system, and a new electronic braking system.



Flexible in operation: The modular platform allows configurations of up to 22+22 axle lines – for maximum adaptability in a wide range of transformer transport scenarios.



Teamwork for progress: Together with Kübler, TII SCHEUERLE has developed a transport solution that sets new benchmarks in transformer logistics.



Strong partnership: The team from TII SCHEUERLE – including owner Susanne Rettenmaier (TII Group) – and the team from Spedition Kübler at the launch of the STB 320 bridge combination – a symbol of visionary collaboration.

Company profile

The TII Group, a company owned by the Heilbronn-based Otto Rettenmaier family, is a globally active manufacturer of heavy-duty and special vehicles and has a workforce of around 1000 employees. The Group includes industry specialists, TII SCHEUERLE and TII KAMAG, and has production sites in Germany and India along with a worldwide organisation of sales and service partners. With innovative vehicles for manoeuvring and transportation operations, the TII Group, which is listed in the index of world market leaders, supports its customers in the transport and logistics sectors, building industry, plant engineering, air and space travel, shipbuilding, energy, steel and mining as well as yard logistics for realising a wide range of complex transport tasks. The TII Group holds the current world record of over 23,000 tonnes for the transportation of extremely heavy loads on vehicles. TII stands for the tradition of innovation, customer orientation and partnership as well as for high product quality and sustainability in heavy-duty mobility.

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