

BÄCHLI TICKS ALL THE BOXES

BÄCHLI

WITH ITS PROVEN PRODUCTS, YEARS OF EXPERIENCE, AND FORWARD THINKING, SWISS FIRM BÄCHLI IS A LEADING SUPPLIER OF CHOKES AND TRANSFORMERS TO THE RAILWAY INDUSTRY.

Its portfolio includes DC line chokes, line filters, common mode and battery charging filters, auxiliary and control transformers, power socket care with residual current protection, DC power supplies and charging rectifiers.

"We are one of the most innovative manufacturers of energy-efficient inductive winding products," Jennifer Bächli, marketing manager, told BtoB Rail. "The company is active in industrial sectors such as mechanical engineering, medicine, chemistry, nuclear power plants,

renewable energy, and the complex energy supply chain. Also, over recent years it has established itself in the rail business with impressive new developments like large power transformers without external cooling. In addition to route supply, i.e. infrastructure, our main focus in the rail field is energy conversion in passenger trains and locomotives."

In today's increasingly competitive and demanding rail market, to stand them in good stead when bidding for tenders, train manufacturers must propose extremely compact and lightweight designs that incorporate the latest materials and are highly energy efficient.

Aware of this imperative, the strengths of Bächli's product design, according to head of engineering Frank Hanisch, lie in:

- 1) the company's ongoing pursuit of energy-efficient solutions to create long-term, ecological added value, supported by
- 2) considerable experience in developing even unconventional solutions.

"For the perfect solution, a good engineer thinks outside the box and considers what should be included in the product," says Mr Hanisch. "He or she only calculates according to the given specifications, but technically tries to go one step further."

"Our wide range of knowledge in other technical areas, such as drive technology, power electronics and power plant technology, helps us develop precise solutions," he adds.

Bächli develops and manufactures all its components, which are user-specific and tailored to customer requirements, in-house in Switzerland. Custom-made and one-of-a kind equipment for niche areas are the order of the day. As are retrofitting and repairing third-party systems.

"Since we are an SME (small to medium-sized enterprise), you as the user always have the complete engineering, construction and organisation of the product from a single source," points out Mr Hanisch. "There are no long delays or hierarchy to deal with, just fast, flexible, and competent transactions to maturity."

"Furthermore, from this single source, customers also receive in time all relevant electrical data, interfaces, and design documents,

together with the necessary tests and certificates," he adds. "We enable the development and launch of new products, including first article inspection [FAI], even for time-critical products / projects."

Keeping tabs on maintenance and energy

To help customers save energy and reduce operating and maintenance costs, Bächli creates synergies with directly coupled assemblies and accessories such as housings, fans, fuse elements, contactors, braking, and precharging resistors."

In addition to the purchase price of rolling stock, a significant cost factor is maintenance. Large companies often calculate two to three times the purchase price of a vehicle for upkeep and maintenance over the next 20 years.

"Thanks to our know-how, we can develop transformers and chokes in the large output range that are completely maintenance-free, both for roof or underfloor installations, and which require no external cooling," explains Ms Bächli. "Energy savings in the higher kilowatt range are possible, which means more attractive, i.e. lower operating costs over the years."

Although it is important that the manufacturer of a vehicle involves the supplier right at the beginning of the development phase, this is often not the case with transformers and chokes, Bächli told BtoB Rail. Why not? Because one tries to avoid these components or underestimates their size and weight. «If such a component is needed later, it must adapt to the environment.» says Mr Hanisch. «There are often too many compromises and concessions to efficiency and quality."

To overcome this issue, Bächli helps customers fully understand the cost-efficient capabilities of inductive components, as

well as the added value of timely planning, by providing targeted training for their developers and designers.

Less additional costs, e.g. cooling, more monitoring and sources of error, lead to greater safety and reduced energy losses; ultimately resulting in huge energy cost savings. An analysis carried out by Bächli, at end-2012 for a well-known Swiss railway company, resulted in ROI within just five years, which represents a significant gain in RAMS (reliability, availability, maintainability, safety) and cost management (life cycle costing, LLC).

"Today, rolling stock manufacturers and train operators appreciate this (solution) approach to better collaboration through concept training," says Mr Hanisch. "Stadler Rail, Deutsche Bahn [DB], SBB [Swiss Railways], Rhätische Railway (RhB), Berner Oberland-Bahnen (BOB), Talgo, and rolling stock owners operating globally are all part of our growing customer base."

Developing and training to stay ahead

Every year Bächli invests a substantial part of its engineering potential (staff engineering power, performance, and time) in basic development. Right now, in addition to exploring new materials, the focus is on improving its mechanical and electrical calculation methods, plus investigating the difficulties of certain frequency-related faults, with filter topologies being specifically developed.

A good side effect of the above R&D efforts for Bächli is that these solutions are also interesting for industrial customers outside the rail sector. Furthermore, thanks to its extensive network of contacts in rail and related industries, the company is able to reap the benefits of technical training, expertise, and subject-specific exchanges.

Catch up in Berlin!

This September 2018, Bächli will be exhibiting at InnoTrans, the international rail fair held every two years in Berlin. "It's a great good opportunity for us to showcase our products and expertise," says Ms Bächli. "I am confident in our ability to develop optimal solutions, both with existing and new customers, and to supply them with high quality products."

*Bächli at InnoTrans 2018
Hall 2.2 / Stand 207*

