

Investments in Technical Development

Pay Off

The joint-stock company **ETD TRANSFORMÁTORŮ**, successor of a plant producing power transformers, which belonged to Škoda Plzeň, is at the cutting edge of its industry. Just like in its beginnings (in 1924) when, after three years of licensed production, the company began to manufacture machines of its own design thanks to the support of research and development. It is only due to the purposeful research and development work of educated and enthusiastic people that ETD transformers are becoming successful both at home and on international markets.



The company is focused on piece and small-lot production of power transformers, chokes and reactors with high added value. Each transformer is original. Its design, materials and production technology are based on long-time experience with respect to all specific requirements of customers with regard to its use, expected load and location. The locations are literally from the polar circle and African deserts to South American rainforests.

Says the company's Managing Director, Roman Choc: "Each territory and each investment plan has its specifics and we are prepared to meet such challenges." The company has an integrated management system according to the standards EN ISO 9001:2008, EN ISO 14001:2004, BS OHSAS 18001:2007 and EN ISO 3834-2 (Quality requirements for fusion welding of metallic materials). Its final inspection testing facility is a holder of a Certificate of Testing Activity Qualification issued by AZVN, as Testing Facility E 11.

"Competition is tough and every year it's more difficult to succeed on the market," says the company's Commercial Manager, Majid Shamas Toma. "Some countries protect their markets by a barrier of bizarre technically unsubstantiated requirements. We are fighting the increasing tendency of investors and customers preferring cheap products, which might cause serious operation problems. Of course, quality and reliability costs more." With regard to the good name of the transformers from Plzeň, ETD TRANSFORMÁTORŮ cannot afford to (and it is not its objective either) compete with cheap transformers from Poland, China and India, whose low prices correspond to their low quality and utility value. "It was thanks to the high quality and advanced technical level that in 2015 the company had no troubles implementing in its design and technology procedures



the European Commission's regulations executing Directive 2009 / 125 / EC of the European Parliament and of the Council establishing the requirements for the efficiency of small, medium and large power transformers in order to reduce power consumption," emphasises the company's Technical Manager, Milan Valečka.

Continuous innovation

The production of transformers must be continuously modernised and it is necessary to invest in new technologies and technical development. The company invests large amounts of money in modernisation and new technologies and manufacturing procedures every year. It invests at least 5% of its turnover. These funds enable it to continuously update its software equipment. Lately, that has included multi-physical 3D software for mathematical modelling of complex electromagnetic and thermal tasks, single-purpose programs simulating the distribution of voltage in winding, programs for calculations and simulation of mechanical stress and, last but not least, 3D design systems, AutoCAD, etc. For 2017–2018 ETD is preparing large investments in a new testing facility, winding stabilisation procedure, clean production environment, etc.

However, what seems to be crucial is the emphasis on education and continuous increase in employees' knowledge. That is connected with the company's participation in subsidy procedures organised by both domestic and European grant agencies. The participation of its essential employees in solving teams along with the representatives of research institutions and technical universities on national as well as international level enables ETD to keep contact with the leaders of the industry.

For the same reason the company has been operating the "Electrotechnical Testing Facility", which is independent on the production of transformers and offers a wide range of electrotechnical and electrotechnological testing and measuring. The testing facility is accredited by the Czech Accreditation Institute (Český institut pro akreditaci) according to ČSN EN ISO/IEC 17025:2005 as a testing laboratory no. L1526. According to the testing facility's manager, Petr Šíma, "the electrotechnical testing facility works within the acknowledged flexible scope of the accreditation, which enables easier and more flexible adaptation to the current demand for accredited testing. That includes especially development and type tests of transformers, chokes, traction motors, resistors, traction equipment, and tests of low- and high-voltage switching devices and distributors."

High-quality technical service

The company takes pride in the high level of the technical service for its products, especially during the measuring of transformers before putting them into operation, as part of operation diagnostics and regular inspections of transformers throughout their operation. "We take responsibility for each individual transformer we make. We are ready to provide our customers long-term quality guarantee for our transformers and offer them comprehensive service throughout the lifecycle of the transformer," says ETD's Production Manager, Petr Jindřich. The company's target is clear: offer transformers that are great value for money, featuring a wide range of power and voltage levels, low noisiness (under 50dB) and high reliability.

Investments in innovation

3D multiphysical software for mathematical modelling of combined electromagnetic and thermal tasks

AutoCAD

Programs calculating and simulating mechanical stress

3D design systems

Single-purpose programs simulating the voltage distribution in winding

For 2017–2018 large investments in a new testing facility, winding stabilisation process and clean production environment are being prepared