



PRESS RELEASE

Construction of a dynamic and environmentally-friendly test centre of the future

Höxter, 6 July 2021. Each year, the Arntz Optibelt Group's test centre makes savings equivalent to the private electrical energy consumption of all Optibelt main plant employees, almost the entire electrical energy consumption of all private households in Munich, and the weight of approximately 28,000 tyres. This corresponds to more than 1,800 million kWh or approximately 1,000 tonnes of hazardous rubber waste.

The Arntz Optibelt Group's project to establish a dynamic and environmentally-friendly test centre of the future, from 2017 to 2019, was funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB).

In the central test facility of Arntz Beteiligungs GmbH & Co. KG, a company belonging to the medium-sized Arntz Optibelt Group, three sub-projects were carried out, involving the modular construction of large-scale, energy-efficient test benches, a number of sensors that measure previously scarcely known belt properties, and application-related test rigs for belts.

With a new servo-tensioning technology, the large test benches save 1.4 million kWh per year, which corresponds to the private electrical energy consumption of all the employees at Optibelt's main plant. By switching to the new, efficiency-optimised Optibelt V-belts, belt users can also reduce their energy consumption by a total of 1,800 million kWh per year. This is almost as much as Munich's private electrical energy consumption. The new test benches also verify that using longer-lasting belts that are more resistant to foreign bodies reduces the annual amount of hazardous rubber waste by around 1,000 tonnes. This equates to the weight of the tyres of 28,000 cars.

The test centre

The dynamic properties of the belts, and thus the maturity of the product development, are tested on 90 test benches. In 2017, when the project application was submitted, the annual energy consumption of the test centre was 1.4 million kWh. Due to the addition of new test benches, especially the higher power benches, a nominal power increase of 1.5 MW along

with higher power and time utilisation was expected for the following five years, which would have increased the energy consumption to 4.3 million kWh without any further measures. In addition, 1.4 million kWh would have been needed for room cooling, which is indispensable for establishing the required testing and working conditions.

The measures

In the project funded by the BMUB's Environmental Innovation Programme, three challenges were to be overcome in the test centre. Using an innovative servo-tensioning technique that cleverly exploits the mechanical laws of torque and speed transmission, test benches with 200-kW and 1,000-kW continuous test-belt power were built and all high-loss test rig components were equipped with efficient liquid cooling.

The new test benches were motorised, equipped with extensive sensor technology, networked, and linked to calculation tools and a database.

The project also resulted in the creation of a noise test rig, on which the belt load for a combustion engine can be simulated, for example, as well as a friction value test rig used to analyse any friction value anomalies found on the noise test rig, and a modular test rig for testing the functions of agricultural applications.

About Optibelt

The Arntz Optibelt Group is one of the world's leading manufacturers of high performance drive belts and develops sophisticated drive solutions for use in mechanical engineering, the automotive industry, the agricultural machinery sector, household appliance industry and the medical sector. The family-run company controls eight production sites in six countries from its headquarters in Höxter and maintains its own logistics and sales centres in Europe, North and South America, Southeast Asia and New Zealand. Worldwide more than 2150 employees provide the best possible service, excellent customer proximity and the highest quality and safety standards.

www.optibelt.com

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