PRESS RELEASE

PILLER and TU Clausthal receive funding for a joint development project

A joint development project by Piller Blowers & Compressors GmbH and the TU Clausthal is being supported by the Federal Ministry of Education and Research (BMBF) with over 400,000 Euros in funding. The aim is to develop new technologies for turbo gears that are intended to further reduce the energy consumption and CO_2 emissions of Piller's high-performance blowers, which are already energy-efficient.

[*Moringen/Clausthal, April, 26, 2023*] Piller Blowers & Compressors GmbH has started a three-year development project with Clausthal University of Technology, which is funded by the Federal Ministry of Education and Research (BMBF) with over 400,000 Euros as part of the 7th energy research program "Innovations for the energy transition". Research funding is an important building block in energy policy up to the year 2050, which aims to halve primary energy consumption compared to 2008. "Because we want to make an even greater contribution to this than before, we have started developing new technologies for turbo gears for an operating range of maximum 15,000 revolutions per minute and a maximum drive power of 900 kW together with the TU Clausthal," explains Philipp Kellner, Head of the Design at PILLER.

"With a package of measures consisting of innovative gearing, an integrated pressure collar and a sliding bearing that can be switched off, we want to reduce the power loss by more than 50 percent compared to the current design," emphasizes Hans-Joachim Ring, Head of Research and Development at PILLER. With the current energy mix, an additional 500 tons of CO_2 savings would be possible over the entire service life of a machine. This CO_2 savings potential per machine was one of the reasons for the funding - the cooperation with the TU Clausthal is another. The team at the TU Clausthal around Prof. Dr.-Ing. Armin Lohrengel has great expertise in the field of pressure combs and also has the necessary infrastructure for the test runs that are due later, which PILLER has already used to test other machine parts. "For us, the cooperation means the opportunity to take a holistic view of the pressure combs researched at the institute in the transmission environment and to test the results of basic research in application," emphasizes Prof. Dr.-Ing. Armin Lohrengel.

"It is planned to integrate the function of the squeeze oil damper used today into the transmission by means of a ‚disconnectable tilting pad bearing' in order to save the entire bearing of the squeeze oil damper as a module", adds Philipp Kellner. The big challenge here is the design and construction of the new bearing, which on the one hand has to provide the necessary damping and on the other hand must not produce any additional losses during operation. “In the future, we only want to use the new bearing to safely pass through the first bending-critical speed. It will be switched off in continuous operation,” explains Philipp Kellner. Piller Blowers & Compressors GmbH came up with the idea for further development because experience from customer projects has shown that energetic and process-related improvements to the gearbox are possible. “The goal is not just energetic improvement and further development. Because there is no supplier with whom this can be implemented, we have developed the ambition to ultimately produce the optimized turbo gear ourselves with our partners,” Philipp Kellner explains the ambitions at the end.

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About
Piller Blowers & Compressors

Piller Blowers & Compressors GmbH, based in Moringen, develops, designs, and manufactures customer-specific high-performance blowers and compressors for the process industry. The roots of the family business go back to 1909.

With completely individual designs or suitably configured machines from the modular product portfolio, PILLER delivers efficient and economical solutions to customers from many industries, including the food industry, pulp and paper production, the chemical industry, the petrochemical industry, the pharmaceutical industry, or industrial wastewater treatment. PILLER supports customers with innovative technology for heat recovery on the way to a resource-efficient production. The high-performance blowers and compressors for mechanical vapor recompression (MVR) and steam regeneration processes significantly increase energy efficiency, reduce the spendings for primary energy, and lead to CO_2 savings in the processes. In ongoing installations, up to 75 percent reduced energy consumption, over 60 percent reduced CO_2 emissions and up to 90 percent energy cost savings have been proven in industrial heat pump processes. In addition, PILLER offers blowers for the CCR platforming process as well as process gas blowers. Comprehensive services – expert advice, commissioning, maintenance, and servicing – round off the offer.

With more than 100 years of experience and continuous investment in research and development, PILLER is working to push the boundaries of the already high efficiencies, power availability, and long running times of its machines to permanently maintain and constantly expand its global technological leadership in high-performance blowers and compressors.

With 425 employees and branches in the USA, Singapore, China, and Australia as well as joint ventures in Korea, India, and Brazil, PILLER is now internationally positioned and exports 85 percent of its products. Group sales in 2022 amounted to EUR 97.3 million.

About
TU Clausthal – University of *Circular Economy*

The TU Clausthal is a strong research university with an outstanding national and international network. With around 3,500 students and more than 1,100 employees, the Harz University is the most important economic factor and the largest employer in the region. Science works closely with industry in many transfer projects, thus bridging the gap between basic research and application. With the circular economy, the resource-efficient recycling economy, the university has given itself a profile-forming central theme in its overall university future concept. In addition to the classic circular economy of materials, the circular economy also includes renewable energies and the digital control of the entire system. As a University of the Circular Economy, the very international TU Clausthal is involved in the energy transition and the development of a sustainable society in the digital age.

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