Press release

Modular Coupling System from Continental and aft automotive Wins Materialica Award

- **Promoting greater sustainability: Synthetic solution for thermal management in vehicles reduces material consumption and cuts CO_2 emissions**
- **Arndt Nikolaus, the Continental partner in the joint venture: "This award is an affirmation of our mutual partnership."**
- **Future potential: This is planned to be used for thermal management of batteries in electric and hybrid vehicles**
- **Under the name JoinPlas, the joint venture is producing couplings made of high-performance synthetics for future mobility**

Hanover, October 21, 2020. JoinPlas, the joint venture between technology company Continental and system supplier aft automotive, impressed the 18th Materialica Design + Technology Award judges with a synthetic modular coupling system for thermal management in vehicles. The award-winning coupling system saves material, reduces weight and optimizes media flow in vehicles both with electric drives and with internal combustion engines. That is the reason for it being honored by the judges in the Process category. "We are absolutely delighted with this award. It is an affirmation for the entire team that worked tirelessly on this development. Pooling and sharing our know-how in order to drive the future of automotive lines is a further major milestone in our partnership," declares Arndt Nikolaus, the Continental partner in the newly established joint venture.

Innovative connector offers material savings of up to 15 percent

The complex line systems for thermal management both in electric vehicles and in vehicles with i.c. engines place high demands on the individual components. To connect these to each other, the automotive industry requires a large number of custom couplings. Previously, each coupling variant needed a dedicated injection mold. That meant high design, toolmaking and process validation costs. The modular coupling system, on the other hand, needs just two tools per diameter. The connection angle can be varied, and all the production steps can be fully automatically monitored using a camera.

Furthermore, the optimized basic design of the coupling system enables material savings of up to 15 percent and a correspondingly lower weight. To that can be added its improved performance because pressure losses are minimized while line diameters are also smaller. The right mixture of rubber, polyamide and aluminium materials and an ingenious line geometry ensure the system has adequate inherent stability.

Your contact:
Jochen Vennemann, phone: +49 511 938-18024

CO_2-efficient solution shows the way for future mobility

The smart use of existing components and the modular construction of the JoinPlas coupling system impressed the Materialica Award 2020 judges, as did the simplified production and the future-focused use in thermal management of batteries. “This CO_2-efficient solution shows the way for future mobility,” declared the judges in their citation. That is because the coupling system does not just cut CO_2 emissions in operation, where the weight saving results directly in low fuel consumption in i.c. engines in particular. Even back at the manufacturing stage, the material saving means a lower demand for resources and therefore further CO_2 savings.

JoinPlas, which was set up this year, will begin production of these high-performance synthetic couplings for future mobility at the beginning of 2021. The joint venture partners Continental and aft automotive have been jointly developing synthetic connectors for cooling circuits, turbochargers and charge-air coolers since the end of 2016 and are now further extending this expertise to hybrid and electric vehicles.

The Materialica Award ceremony was held at the eMove360° Hybrid international trade show for electromobility and autonomous driving in Munich. Every year, it honors new products and concepts that feature a perfect interaction of smart material selection, outstanding engineering performance, a high level of innovativeness and impressive design.

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Continental develops pioneering technologies and services for sustainable and connected mobility of people and their goods. Founded in 1871, the technology company offers safe, efficient, intelligent and affordable solutions for vehicles, machines, traffic and transport. In 2019, Continental generated sales of €44.5 billion and currently employs more than 232,000 people in 59 countries and markets.

aft automotive produces and develops innovative products for media management in vehicles for the global automotive industry. The passion of employees for innovations and sustainability are the basis of numerous developments. aft aims to always be one step ahead with its own solutions. This innovation leadership offers aft customers and partners maximum reliability and forms the basis of responsible behavior and cooperative success.

Press contact

Jochen Vennemann
External Communications
ContiTech
Phone: +49 511 938-18024
Email: jochen.vennemann@contitech.de

Mareike Hagenah
HR and Public Relations
aft automotive GmbH
Phone: +49 2575 97782 332
Email: m.hagenah@aft-automotive.de

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Pictures and captions

Continental_PP_Connector_01

Flow and weight-optimized quick connector made from polypropylene with temperature sensor.

Continental_PP_Connector_02

Flow and weight- optimized Quick Connector made from polypropylene.

Continental_PP_BatteryCoolant

Battery coolant line made from thermoplastic elastomer. Material selection and design focused on weight-, cost- and CO_2-reduction.

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