

**PRESS RELEASE****Contact:**

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**"Innovative Solutions for All Types of Propulsion"****Fuel cell, battery or combustion engine: "Future of Propulsion Systems" is one of MANN+HUMMEL's focal points at the IAA TRANSPORTATION 2022.**

Ludwigsburg, September 19, 2022 – The propulsion transition is coming, that much is certain. But which technology will win the race? Will the fuel cell outstrip the battery-electric drive, or will the combustion engine, perhaps even in the form of a hydrogen engine, last longer than expected? Depending on function and area of use, experts anticipate that various systems will coexist in the medium term. At the IAA TRANSPORTATION 2022 in Hanover (September 20 to 25), the Ludwigsburg-based filtration specialist MANN+HUMMEL presents itself as a reliable partner for all types of propulsion (hall 13, booth C33).

**Hydrogen: an essential solution for transportation and logistics**

There will be no "one" solution, says Heinz Bühl, Vice President New Products at MANN+HUMMEL. Rather, different types of propulsion could be further developed in parallel. In urban and delivery traffic, for instance, battery-powered vehicles are "practically unbeatable," while fuel cells are increasingly being used for high-performance commercial vehicles. "Electric vehicles are a readily available transitional solution to get away from fossil fuels. For transportation and logistics, on the other hand, hydrogen can offer long-term propulsion and energy storage systems."

**Fuel cell: competence for the entire system**

Consequently, fuel cell technology is an important pillar of the company's presence at the IAA TRANSPORTATION. As a system supplier, MANN+HUMMEL has many years of expertise and is therefore also able to develop customer-specific solutions to the highest quality standards. The products presented in Hanover enable operation that is as safe as it is sustainable – from the cathode air cleaner, which protects fuel cell stacks from impurities in the air and thus ensures a steady performance, to the versatile water separator, which can be used to separate liquid water from the exhaust gas of the fuel cell. The MANN+HUMMEL broad band silencer, for its part, improves the acoustic properties of the system. Finally, in the coolant circuit, a special particle filter removes impurities that can block narrow cooling

channels or accelerate wear on the pump. To keep the electrical conductivity of the coolant below permissible limits, ion exchange filters are used to guarantee system safety.

**Electric motor: trouble-free operation thanks to e-axle module**

The actual propulsion unit in both fuel cell and battery electric systems is the electric motor, which together with the components of the drive axle is subjected to maximum stress levels. In addition to particle-free lubrication, dissipation of the heat generated is of crucial importance. In cooperation with commercial vehicle and axle manufacturers, MANN+HUMMEL develops and builds special e-axle modules that combine fluid delivery, fluid management, temperature control and filtration in one compact component. By providing these functions at the lowest possible differential pressures – and thus minimizing energy losses – trouble-free operation of the electric drive is made possible over its entire service life.

**Tailor-made: VentPlus modular system for the battery**

In all-electric vehicles, it is important to protect the sensitive battery system from water and dust while at the same time providing pressure equalization. With the modular VentPlus system from MANN+HUMMEL, a tailor-made pressure equalization element for individual customer requirements can be put together from various versions of tried-and-tested components.

**Drive mix avoids new dependencies**

The coming years or decades will show which propulsion technology will ultimately be successful on a broad scale. Bühl: "MANN+HUMMEL offers innovative solutions and products for all types of propulsion."

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