Press Release

Air Spring Suspensions on the Rise for EVs

Darmstadt, 14 December 2017. Air spring suspensions are becoming more and more popular in premium vehicle segments as they fulfill various demands for improved comfort as well as optimized driving dynamics. But new and established electric vehicle manufacturers also count on air spring applications, as air spring suspensions bring additional benefits for fully electric vehicles.

The stiffness of the air springs constantly adapts to the current load conditions so that, unlike steel springs, the body frequency of the chassis remains constant at all times, no matter if the vehicle is fully loaded or empty.

Switchable air springs even enable different configuration of spring properties, as the valves activate or deactivate specific air volumes to change the used air volume in the spring. Switchable air springs allow the driver to manually select their desired driving mode, such as a sports or comfort mode. Switched air springs play a direct role in vehicle dynamics and can reduce the rolling motion of a vehicle during cornering, for example, by temporarily applying a hard setting to the spring.

Ensured airflow to keep the battery cool

In the case of electric vehicles air spring applications at the back or on all four corners of the vehicle are becoming increasingly popular. This allows the level of the car to be controlled, which is particularly important for pure electric vehicles as it allows airflow guidance beneath the car. This is especially important for efficient passive cooling of the battery packs, which are predominantly positioned in the floor area of the car. To achieve this, the air suspension can keep the ground clearance and angle of incidence constant to always enable the optimal airflow and prevent aerodynamic blocks.

Lowering the electric vehicle in appropriate driving situations, such as while driving at higher speeds on expressways, can also reduce air resistance and thus increase range. Furthermore, air springs improve acoustic properties, which is particularly important in the case of electric vehicles due to the lack of masking of vibrations caused by the combustion engine. That's why almost all EVs come with at least a two corner-system on the rear or even four-corner applications.

A company that has played the right card at the right time

Vibracoustic is known as a leading manufacturer of vibration control solutions for the global automotive industry. Its own research and development in the field of modern air suspension systems shows that Vibracoustic has played the right card at the right time. No competitor worldwide has the know-how for all the individual systems from a single source – from level control to high-end switchable comfort solutions up to the innovative application of activated carbon within the air spring to increase the air volume without increasing the packaging.

approximately 2 billion Euros in 2016. Vibracoustic has around 10,000 employees at 43 locations in 19 countries, who develop and produce powertrain and chassis components for automotive vibration control. For more information, see www.vibracoustic.com

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