Press release

**Innovative sensor technology from Dürr Assembly Products GmbH offers maximum flexibility**

**x-3Dsurface: Optimization and flexibilization of chassis geometry measurement in commercial vehicles**

Bietigheim-Bissingen, 16 February 2023 – The great diversity of models, the high variability of track widths and wheels, and an ever-increasing number of driver assistance systems mean that commercial vehicle production requires increasing flexibility for measuring and adjusting chassis geometry at the end of the line. To meet these requirements, the test engineering specialists from Dürr Assembly Products GmbH developed and implemented the non-contact sensor x-3Dsurface in the x-wheel truck *d* wheel alignment stand for commercial vehicles. Several projects at well-known premium commercial vehicle manufacturers demonstrate the strengths of innovative sensor technology globally.

The sometimes multi-axle structure of commercial vehicles poses unique challenges for measurement technology, which the non-contact sensor x-3Dsurface can address. Its outstanding features are its highly precise surface-based measurement and that it is ready to perform measurements immediately, providing a significant cycle time benefit, especially for multi-axle commercial vehicles. The measurement contains much more information than the previous line-based one and covers more vehicle types. These strengths allow the customer to perform a more efficient and stable chassis geometry measurement. Furthermore, the flexible sensor distinguishes itself by integrating easily into existing systems and is not sensitive to outside interference.

**Two cameras, three dimensions**

The two cameras of this non-contact system capture the entire wheel and display it as a three-dimensional “measuring surface in space.” This measuring surface helps to calculate chassis geometry values such as toe-in and camber. The innovative sensor x-3Dsurface also enables non-contact caster and kingpin inclination measurement for the first time without having to mount measuring plates on the wheel. Precise adjustment of the chassis geometry ensures that the steering wheel remains straight while the vehicle is driving straight ahead, and tire wear is optimized, ensuring increased range on commercial vehicles with either a combustion engine or electric motor.

Commercial vehicle manufacturers favor new technology

Joint tests in the Dürr Assembly Products factory in Püttlingen in Saarland, Germany, verified the function, reliability, precision, and reproducibility of the new sensor with the most accuracy on the calibration gauge and various commercial vehicles. Based on the positive test results, many European commercial vehicle manufacturers have decided to equip all new test stands with the technology and retrofit the new sensor to existing machines.

It is not only European companies that the sensor has impressed. Many other premium commercial vehicle manufacturers in the USA, China, and Brazil have equipped their new wheel alignment stands with x-3Dsurface. The x-wheel truck *d* wheel alignment stand in combination with x-3Dsurface is ideally suited to today’s chassis geometry measurement requirements.

**NEXT.assembly stands for combined technical expertise**

Dürr has packaged its technical expertise for efficient final assembly of the future under the title “NEXT.assembly.” One pillar of this is the subsidiary Dürr Assembly Products, with products and solutions for end-of-line inspection technology. NEXT.assembly is the most comprehensive offering on the market, ranging from planning and consulting to implementing individual processes in conveyor, gluing, assembly, filling, and inspection technology to the process-optimized overall system (one-stop shop). Dürr harnesses synergies at all levels and ensures increased value through intelligent and connected processes.

**Pictures**



Picture 1: Wheel alignment stand x-wheel truck *d* with x-3Dsurface in production setup



Picture 2: x-3Dsurface in operation

The Dürr Group is one of the world's leading mechanical and plant engineering firms with extensive expertise in automation and digitalization/Industry 4.0. Its products, systems and services enable highly efficient and resource-saving manufacturing processes in different industries. The Dürr Group supplies sectors like the automotive industry, mechanical engineering, chemical, pharmaceutical, medical technology and woodworking industries. It generated sales of €3.54 billion in 2021. The company has almost 18,400 employees and 120 business locations in 33 countries. The Dürr Group operates in the market with the brands Dürr, Schenck and HOMAG and with five divisions:

* **Paint and Final Assembly Systems**: paint shops as well as final assembly, testing and filling technology for the automotive industry, assembly and test systems for medical devices
* **Application Technology**: robot technologies for the automated application of paint, sealants and adhesives
* **Clean Technology Systems**: air pollution control, noise abatement systems and coating systems for battery electrodes
* **Measuring and Process Systems**: balancing equipment and diagnostic technology
* **Woodworking Machinery and Systems**: machinery and equipment for the woodworking industry

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