ZF at the Auto Shanghai 2015: Electrification, Lightweight Design, and Efficient Driveline Technology

- Technology company presents electronics and lightweight construction expertise in Shanghai
- ZF technology makes passenger cars and commercial vehicles more efficient
- ZF with a wide product range in driveline and chassis technology

At the 16th Shanghai International Automobile Industry Exhibition, ZF presents its broad technology portfolio for reduced fuel consumption, preservation of resources, and additional safety. The technology company supplies driveline, and chassis technology for passenger cars and commercial vehicles worldwide. ZF is setting the pace for the future, too – with electrified drivelines and automotive lightweight construction.

Efficient, dynamic, and comfortable: ZF driveline technology

ZF is setting standards with its 8-speed automatic transmission by combining driving dynamics, ride comfort, and efficiency: With reaction times below the human perception threshold and adaptive shifting software, it changes gears precisely when the driver wants. Thanks to a flexible modular construction system, ZF’s 8HP is equipped to meet all requirements: This model range covers the broad torque range between 300 and 1,000 newton meters. The basic transmission can be modified depending on vehicle needs and the intended application: The result is one complete transmission generation with different variants – from plug-in-hybrid transmissions to four-wheel drive.

ZF expertise in lightweight construction and e-mobility

At the Auto Shanghai 2015, ZF is not only presenting the product portfolio to trade show visitors, it is also providing insights into the trendsetting range of expertise of the technology company. Using an innovation prototype, ZF demonstrates the potential of the
combination of e-mobility and lightweight construction. In the ZF subcompact car test, lightweight construction chassis components supplement the electric final drive. Thanks to its high-speed concept and integrated power electronics, the electric drive combines high performance with high efficiency, low weight, compact dimensions, and quiet operation. In practice, this increases the range – and the 90 kW electric drive also develops high performance and driving dynamics.

Efficient Commercial Vehicle Technology
Electrification will take on increasing importance for commercial vehicles, too. First and foremost, the ZF innovation paves the way for lane-independent low-floor city buses, which are powered either very efficiently with various hybrid configurations or even entirely electrically – and hence locally zero-emission. This is thanks to two 120 kW electric motors integrated directly in the axle. The latest AVE 130 also boasts new gearing geometry and even quieter running.

With a maximum axle load of 13 tons and a motor peak output of 2x120 kilowatts, the low-floor axle is even suitable for double-articulated buses. Here, two AVE 130 can be used in response to difficult topography so that the traction characteristics can be substantially improved. The wheels are driven individually via water-cooled asynchronous motors with a high power density and a subsequent fixed two-step ratio. Up to the maximum road speed, the passengers do not notice any tractive force interruption thanks to the absence of any gear changes. The serial hybrid operation together with the low-loss electric drive of the AVE 130 facilitate, with an optimum system configuration, fuel savings of up to 30 percent in driving operation compared with conventional diesel drives.
Captions:
1.) The enhanced second generation of the eight-speed automatic transmission (8HP) is designed to provide effective support to automotive manufacturers in meeting the ever-stricter legal CO\textsubscript{2} standards – and in a cost-effective manner in combination with conventional or hybridized drives.
2.) ZF’s AVE 130 electric portal axle based on an electric independent wheel drive - for particularly economical and resource-saving city bus operation.

Photos: ZF

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ZF is a global leader in driveline and chassis technology with 113 production companies in 26 countries. In 2014, the Group achieved a sales figure of €18.4 billion with approximately 71,400 employees. In order to continue to be successful with innovative products, ZF invested about 5 percent of its sales (2014: €891 million) in research and development. ZF is one of the ten largest automotive suppliers worldwide.

In 2015, the company will celebrate its centennial. Originally named Zahnradfabrik GmbH, ZF was founded in Friedrichshafen in 1915 by Luftschiffbau Zeppelin GmbH among others. In its early years, the company developed, tested and manufactured aircraft transmissions. After 1919, the company's focus shifted to the automotive and commercial vehicle industry under Alfred Graf von Soden-Fraunhofen, the first general manager and later head of the company. In this sector, the company registered numerous patents for innovative transmission technology and established itself once and for all as a major technology supplier. ZF grew outside of Europe in 1958 with a location in Brazil, launching a globalization drive that still continues. In addition, through product innovations and acquisitions, ZF constantly expanded its range of expertise. In 1984, ZF acquired the majority share in Leforfer Metallwaren & Co. KG, a move that extended the product portfolio to include chassis technology. In 2001, ZF took over the former Mannesmann Sachs AG to strengthen its value added product offering with driveline and chassis components. It adopted the current name of ZF Friedrichshafen AG in 1992. Today's product range includes driveline and chassis technology such as transmissions, driveline and chassis components, as well as complete axle systems and modules. ZF products are used in passenger cars, commercial vehicles, construction and agricultural machinery, rail vehicles and marine applications. The company also focuses on the wind power and electronic components business. In addition, ZF Services represents the company on the international aftermarket. In 2014, ZF announced its intention to acquire U.S. automotive supplier TRW.

The shareholders of ZF Friedrichshafen AG are the Zeppelin Foundation, administered by the City of Friedrichshafen, holding a share of 93.8 percent, and the Dr. Jürgen and Irmgard Ulderup Foundation, Lemförde, with 6.2 percent. "Motion and Mobility," ZF’s tagline, clearly states the company's core mission: Right from its foundation, ZF has developed and manufactured innovative products for all people around the globe who want to move things reliably, comfortably and safely all while experiencing the ultimate in efficient mobility. Quality, technological leadership and innovative power have always defined the company's identity – today as much as ever.

For further press information and photos please visit: www.zf.com