



ZF Driveline Technology for Electric Multiple Units (EMUs)

- **ZF offers appropriate bevel and spur gear drives to suit all EMUs**
- **Compact installation dimensions are the key to optimum installation in bogies**
- **Order to supply Siemens for streetcars (RER) in Brussels**

For EMUs, ZF offers individually matched drive solutions backed up by its strong track record in transmission technology. These custom-built products are robust and reliable, and they enhance the ride comfort for passengers: Compact installation dimensions maximize the use made of confined installation spaces. At the same time, ZF transmissions operate quietly, thanks to their helical-cut spur gears.

EMUs really come into their own for public transit companies in local passenger transportation: The existing infrastructure can be used flexibly. Due to the fact that every carriage has its own power pack, carriages can be coupled up and uncoupled to reflect passenger numbers.

The requirements on driveline technology for EMUs are not undemanding: You have to contend with confined installation spaces in bogies that are built as low as possible to enable passengers to board and disembark from the trains quickly, and to move up and down the train without encountering any obstacles. In addition, EMUs have to operate quietly to enhance passenger comfort and the overall attractiveness of this form of transport.

The Special Driveline Technology business unit at ZF Friedrichshafen AG develops customer-specific bevel and spur gear transmissions for EMUs on the basis of existing transmission units. To suit customer requirements, these can either be one-speed or two-speed units and can be used in conjunction with a range of different couplings.



The latest order is from train manufacturer Siemens, which is to supply 305 EMUs to the RER in Brussels. In every one of these multiple units, scheduled for delivery between 2010 and 2013, power from the electric motor is transmitted via a two-speed transmission with toothed coupling. These transmissions are mounted in a space-saving manner directly on the axle, which is designed for an axle load of 20 tons. Due to the fact that ZF makes these helical-cut gears from a ZF-specific grade of steel, the transmissions are not only robust and low-maintenance units - they also operate very quietly indeed.

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ZF is a leading worldwide automotive supplier for Driveline and Chassis Technology with approximately 64,000 employees at 119 locations in 25 countries. In 2008, the ZF Group achieved sales of approximately EUR 12.6 billion. In order to continue to be successful with innovative products, ZF annually invests about five percent of its sales in Research & Development.

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