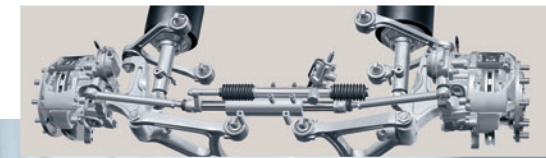
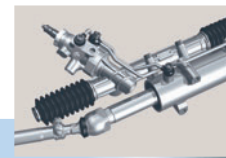


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ZF Independent Front Suspension for Heavy-duty Trucks



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The Truck Chassis of the Future



TA / LKW ERA 06 / E





ZF develops chassis technology for the truck of the future



Independent front suspension
RL 80 ET for heavy-duty trucks

The best features in one new system - well-tried and trendsetting.

ZF has developed a chassis concept for heavy-duty trucks which combines independent front suspension with an airspring-damper module and linear steering system. Thus, heavy-duty trucks can benefit from an integral innovative chassis concept.

All components, with the exception of the brand new innovation ZF-Servoline, a modular rack-and-pinion steering system for heavy-duty trucks, have already been manufactured in volume for other applications: for years, independent front sus-

pensions by ZF have been making city buses and coaches worldwide more manoeuvrable and comfortable. Already today the airspring-damper modules equipped with the electronic damping system called CDC (Continuous Damping Control) ensure in many commercial vehicles, from coaches to heavy-duty trucks, that the right damping force is set for the corresponding load condition.

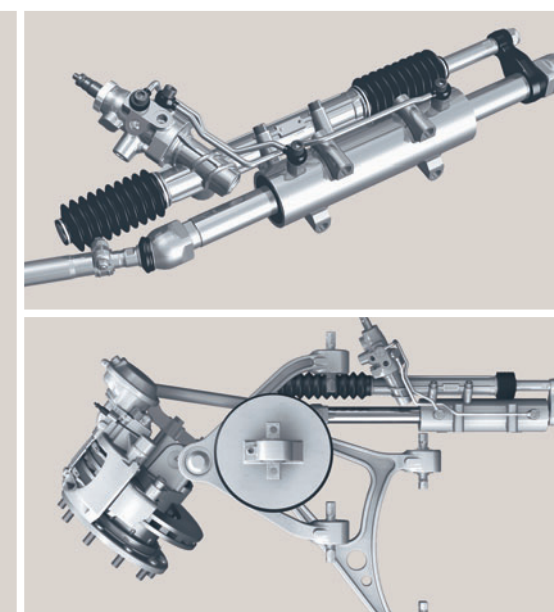
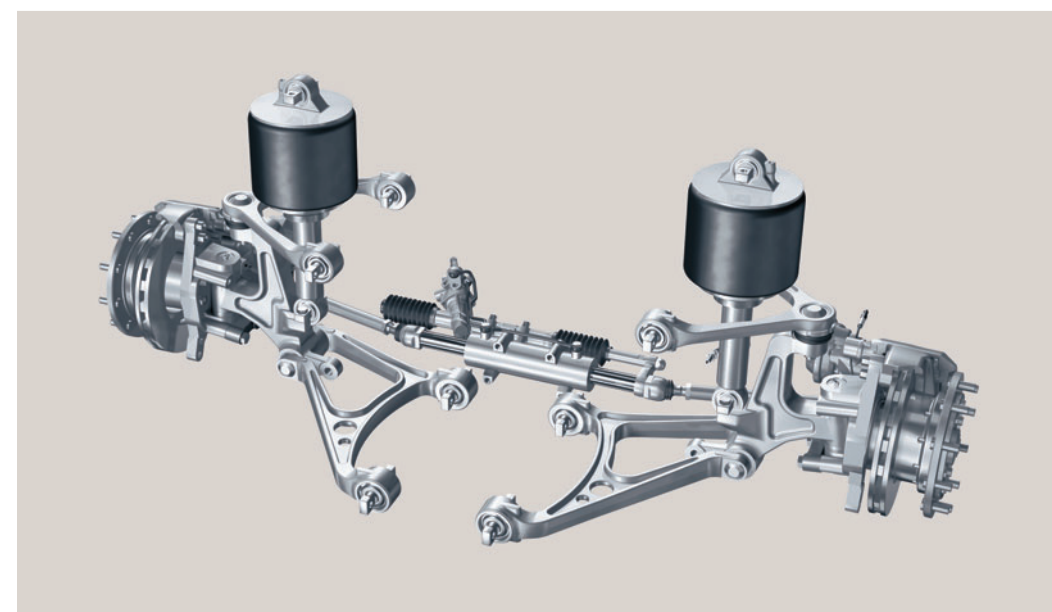
Advantage: system solution

With the independent front suspension systems solution, ZF offers another set of considerable advantages targeted at increasing customer benefit, in addition to features such as comfort, road preservation, and safety. For example, the front anti-roll bar is no longer necessary for most applications. As the axle beam and the clearance it requires for bump travel are no longer necessary, the engine-transmission package can be mounted at a lower position (depending upon the vehicle concept) and consequently makes boarding and exiting of the vehicle much easier - which is particularly important with distributor vehicles. Moreover, when using independently suspended wheels, the wheel turning angle can be increased, thereby reducing the turning circle.

RL 80 ET System

- View of Prototype

Improved driving characteristics for heavy-duty trucks: The ZF "chassis of the future", composed of independent front suspension, the ZF-Servoline rack-and-pinion power steering gear, and the airspring-damper module, enables lower axle weight, a smaller turning radius, improved driving behavior, a higher level of riding comfort, and a plus in safety.



The ZF independent front suspension RL 80 ET has been developed based on the tried and tested double wishbone design. Compared to a beam axle, this concept reduces the unsprung masses. It has been designed with standard truck wheel ends featuring conventional king-pins, suspension uprights, and airspring-damper module (alternatively, a design of separated airspring and damper is possible). These elements result in good spring and damper ratios, reduced axle weight, and good steering performance. Since there is no axle beam needed anymore, there is more flexibility for manufacturers with regard to utilization of installation space. Additional space advantages result from the combination with the steering system ZF-Servoline. The ball-and-nut steering is thus eliminated, leading to more space at the front left section of the frame, e.g. for a larger radiator.

Advantages at a glance:

- Single-source system supply: independent front suspension, airspring-damper module, rack-and-pinion power steering
- Advantages for manufacturers regarding weight, handling and installation
- Enormous increase in safety, manoeuvrability, driving comfort and road surface protection

Independent front suspension for trucks	RL 80 ET
Axle load kg	6,500 - 8,000
Wheel travel mm	+ 100, -150
Wheel cut	51°/36°
Vehicle width mm	2,550
Frame rail spacing mm	approx. 900
Ground clearance mm	approx. 230
Flange to flange dim. mm	2,408
Tire size	385/65R22.5 315/80R22.5
Axle system weight kg	590*

* Weight of the axle including tie-rods, airspring-damper-module and hydraulic rack-and-pinion steering ZF-Servoline