

Front Axle Systems and Chassis Technology for City Buses

A pleasure for both sides thanks to ZF low-floor axles: Passengers appreciate barrier-free access to the spacious passenger compartment while drivers appreciate the small turning circle and high comfort.

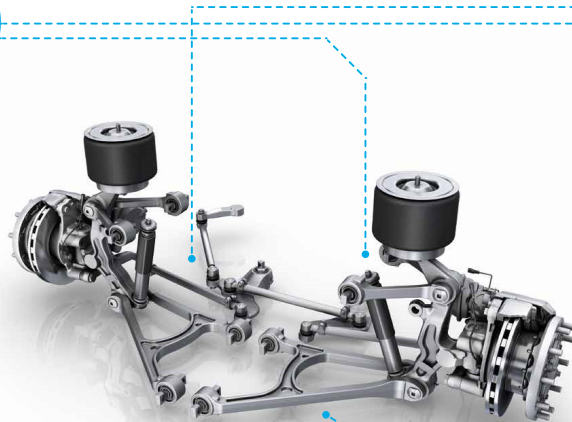
Safety and reliability characterize the entire ZF system and all its individual components. Examples are the ZF independent suspension system RL 82 EC for full low-floor, low-entry and double-decker buses and the RL 55 EC for midibuses. They are the heralds of a new era in axle technology: Weight and strength-optimized components combined with an adapted suspension and damping system guarantee benchmark driving safety and ride comfort. The high level of wheel deflection substantially reduces the turning circle. Other advantages: high axle load, reduced body roll, increased roll stiffness.

Excellent vehicle handling + steering precision = active safety! The arrangement of the maintenance-free control arms optimized with regard to kinematics guarantees precise axle guidance in all driving situations. Just like suspension joints, these control arms have targeted elastokinematic properties which contribute to damping vibrations and noise.

ZF damper technology supports acceleration, braking and lane assistance. Jolts and noise are insulated and the technology itself causes hardly any hydraulic flow noise. In this way, the ZF system and valve technologies guarantee optimal results for vehicle handling, comfort and safety – precisely tailored to the requirements of passengers and drivers.



Damping systems



Independent suspension for city buses



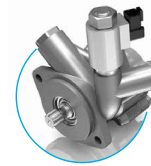
Control arm



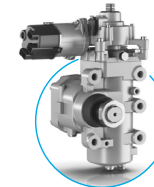
Independent suspension for midibuses



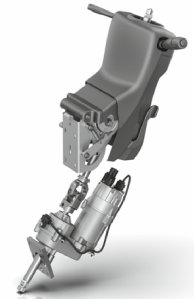
Tie rod/drag link



eActivMode power



ReAX steering



Global Column steering column with ReAX

The THP steering gear series offers exceptional steering comfort, compact design and top performance and reliability values.

The eActivMode power steering pump uses vehicle signals such as speed, velocity and steering requests to adjust the pump flow to the current performance requirements. That ensures maximum energy efficiency.

As a combination of hydraulic power steering and electric actuator, ReAX reduces the steering forces during maneuvering and stabilizes vehicle handling at high speeds. Depending on the configuration, ReAX can be installed either on the steering column or the steering gear.

The Global Column series of adjustable steering columns provides both infinite tilt and telescope adjustment throughout the range of motion for maximum comfort.



Suspension joints

Rear Axle Systems and Chassis Technology for City Buses

Efficiency, safety and comfort: The low-floor concept ensures fast boarding and exiting. This increases average speed on the route, benefiting both operators and passengers.

Available from ZF are driven axles as complete systems including air springs, dampers and axle guidance. ZF portal axles provide continuous step-free passenger compartments with no raised platforms. The wide range of ratios also covers electric drive concepts such as trolley and hybrid drives.

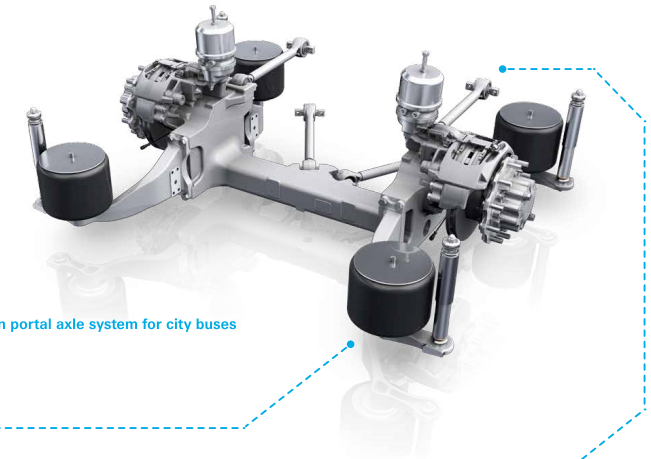
Our AV 133 driven axle features specially ground bevel gears that ensure smooth running and low noise.

The AVN 132 non-driven portal axle is designed as a middle or trailing axle for city buses with 3 or more axles. It can be used in both pusher and puller systems.

For low-entry buses with centrally arranged engines, ZF offers the AV 133 T-Drive solution or the A 132 direct-drive axle.

From a single source. Best for you! A complete package with torque rods and dampers comes with clear advantages: more comfort, less wear and weight savings thanks to lightweight construction. All this results in lower maintenance, fuel consumption and bearing wear, plus longer service life.

A great ride wherever you sit. When the bus drives over bumps, dampers rapidly damp vibrations between axle and body in addition to the suspension. Optimally coordinated, they ensure passenger comfort and safety even on the back seats.



Non-driven portal axle system for city buses



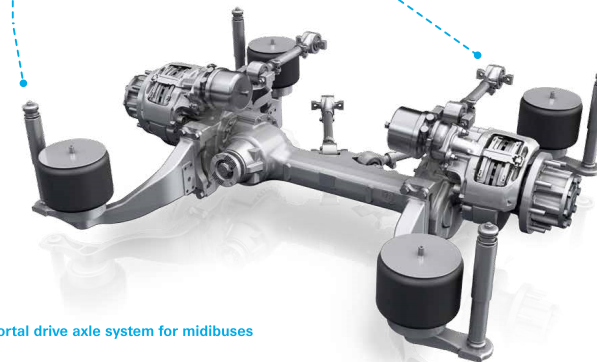
Damping systems



Torque rod



Portal drive axle system for city buses



Portal drive axle system for midbuses