

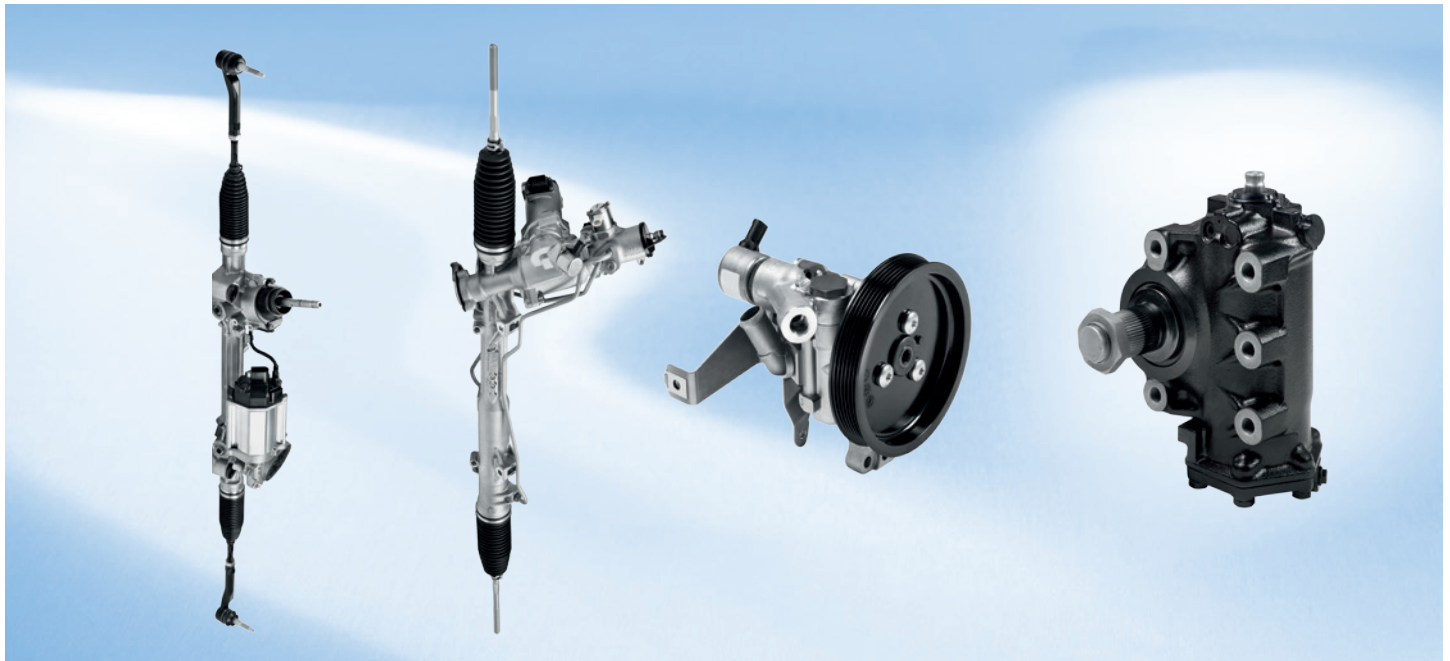
Steering systems for cars and trucks

Overview, features and benefits

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BOSCH
Invented for life



- ▶ With innovative Bosch steering systems, vehicles are heading for a modern future with high directional stability
- ▶ Original equipment quality guaranteed
- ▶ Growing product range including complex components
- ▶ Remanufacturing according to original parts specifications

Workshop support through complete range

Vehicles of all categories, from compact cars and sedans to light commercial vehicles and even to heavy-haulage trucks, are equipped with high-precision steering systems by Bosch. The range of spare parts for workshops includes complete steering systems and all main components in original equipment quality.

Sustainable with Bosch eXchange

Repairs pay off – particularly for commercial-vehicle steering systems.

The Bosch eXchange range includes the most important Bosch steering systems. This allows repairing the vehicles based on their current value – and with a 100% warranty.



Bosch automotive steering - original equipment quality for the independent aftermarket

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Bosch steering systems and components

| Main areas of application | Hydraulic steering | Electric steering | Electric steering Steering column | Active steering | Steering pumps | Steering gearbox Servocom | Steering shafts | Bevel gearbox |
|---------------------------|--------------------|-------------------|-----------------------------------|-----------------|----------------|---------------------------|-----------------|---------------|
| Passenger cars | ● | ● | ● | ● | ● | - | - | - |
| LCVs | ● | ● | - | - | ● | - | - | - |
| Trucks | - | - | - | - | ● | ● | ● | ● |
| Buses | - | - | - | - | ● | ● | ● | ● |



Proven steering system

- ▶ Rack-and-pinion power steering – robust classic among servo-assisted steering systems
- ▶ Proven a million times over
- ▶ Compact dimensions
- ▶ Low weight
- ▶ High functional reliability



Servoelectric for cars and LCVs

- ▶ Power assistance can easily be adapted to any type of vehicle
- ▶ High driving comfort
- ▶ Energy is only required during the actual steering process
- ▶ Energy savings
- ▶ Maintenance-free



Mechanical classic

- ▶ Electric motor installed onto the steering column
- ▶ No steering pump or hoses
- ▶ Low space requirements
- ▶ Low fuel consumption



Safe active steering

- ▶ Situation-dependent variation of the steering ratio
- ▶ Improved driving dynamics
- ▶ Comfortable and easy handling of the vehicle
- ▶ Driving-stability functions for increased safety in critical situations



Pumps for all systems

- ▶ Vane pumps
- ▶ Energy-saving vane pumps (e.g. with ECO valve or Varioserv variable-displacement pump)
- ▶ Tandem pumps for trucks – a combination of vane and gear pumps
- ▶ Radial-piston pumps – the emergency-steering pump for trucks



The standard power-steering system

- ▶ Compact ball-nut power steering system for trucks and buses
- ▶ The most-used steering system for commercial vehicles
- ▶ Can also be installed in vehicles with high steering-axle loads or several steered axles requiring a dual-circuit steering system in order to comply with legal safety criteria



Steering shafts for trucks

- ▶ Ball-track telescopic shafts or ball-track relay shafts with additional universal joints link the steering wheel to the steering gearbox
- ▶ Prevent any influence of possible movements between driver's cab & chassis on the steering behavior
- ▶ Low wear
- ▶ Maintenance-free
- ▶ Also available in a light-alloy design



Steering buses safely

- ▶ Buses and special vehicles, they redirect the steering movement in case the position of the driver and the arrangement of the steering gearbox impede a direct connection to the steering column
- ▶ Flange-mounted directly onto the steering gearbox
- ▶ Can also be supplied for separate installation
- ▶ Low weight (2.1 kg)

Steering Summary:

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- ▶ With innovative Bosch steering systems, vehicles are heading for a modern future with high directional stability
- ▶ Growing product range including complex components
- ▶ Remanufacturing according to original parts specifications