

New to the Bosch range: Steering systems for cars and trucks



Always safely on track

with Bosch steering systems and components



Main areas of application	Hydraulic steering	Electric steering	Electric steering Steering column	Active steering
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



New! Bosch steering systems

The Bosch spare-parts range includes complete systems and all main components.



Bosch eXchange steering systems

The Bosch eXchange replacement-parts range includes the most important Bosch steering systems.



Steering pumps	Steering gearbox Servocom	Steering shafts	Bevel gearbox
•	_	-	-
•	_	_	-
•	•	•	•
•	•	•	•

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 systems 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 and chassis on the steering behavior
- ► Low wear
- ► Maintenance-free
- ► Available in a light-alloy design



Steering buses safely

- ► At buses and special vehicles, they redirect the steering movement in case the posi-tion 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 (4.63 lb)



Safe cornering

Bosch steering systems for cars and LCVs

Constant further development within the automotive sector places high demands on vehicle concepts, systems and individual components.

Bosch steering systems – such as the active steering system launched in 2003

- stand for innovative state-of-the-art developments in automotive technology.

Modern Bosch systems for modern vehicles

Nowadays, drivers of modern vehicles, no matter whether mini cars, middle or upper-class sedans or LCVs, expect much more safety and comfort equipment than they did some years ago. Bosch thus develops and produces systems and components for all major vehicle manufacturers.

Bosch steering systems increase both driving comfort and active safety

The Bosch product range reaches from rack-and-pinion power-steering systems to electric steering systems (Servolectric) and to the intelligent active steering system.

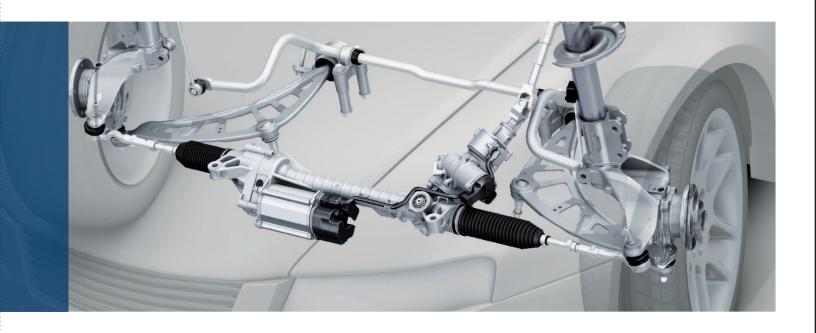
Electric steering in passenger cars not only allows fuel savings of up to .34 gallons per 100 miles; this technology is, at the same time, the basis for several driver assistance systems and for automated driving. This includes automatic evasion in hazardous situations, lanedeparture warning systems or start/stop sailing with the engine turning off during coasting phases.



High steering safety for passenger cars - even with high apex speeds



Precise steering of LCVs in both long-distance and inner-city traffic



1 Electric steering

Servolectric works with an electronically controlled electric motor. Depending on the type of vehicle, it saves up to 90% of energy in comparison to hydraulic steering systems and allows the application of assistance functions.

2 Rack-and-pinion power steering

The robust classic among servo-assisted steering systems has proven its worth millions of times over and stands out for its compact dimensions, its low weight and its high functional reliability.

3 Electric steering: steering column

With electric steering systems, the electric motor is not mounted onto the steering gearbox, but onto the steering column.

Pumps for cars

Steering pumps for optimum performance

When operating hydraulic power-steering systems, steering pumps are a major factor for the performance, energy consumption and noise level of the steering system. Despite their compact design and low weight, Bosch steering pumps achieve highest possible delivery capacities and a high efficiency.

4 Active steering

The active steering system includes a superposition gear system with an electric motor. Depending on the driving situation, it intervenes by changing the transmission ratio before the driver could even react.









Safe steering despite heavy loads

Bosch steering systems for commercial vehicles

Commercial vehicles are also subject to constant technological development. Ecological and economical circumstances are increasingly demanding. Close cooperation with the vehicle manufacturers right from the early stage of devel-opment ensures the efficient adaption of Bosch steering systems to new vehicle concepts.

Full power - economical and ecological

Renowned manufacturers of modern trucks and buses rely on Bosch steering systems and components with particularly high quality. As an international company, Bosch supplies customers around the world with parts from local production sites and supports local commercial-vehicle workshops with technical know-how. In doing so, both innovative products and modern production technologies contribute to environmental protection.

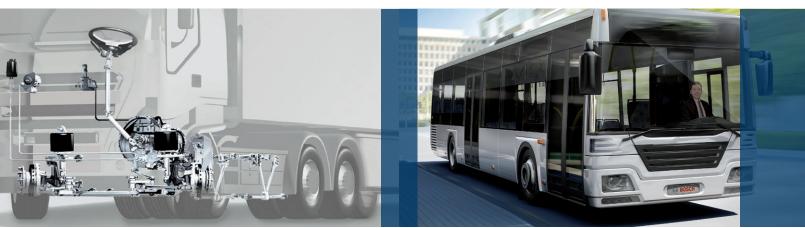
Steering systems meeting toughest quality demands

Robust, reliable and highly accurate steering systems are of major importance, particularly for buses and heavy trucks. The Bosch product range reaches from the bestseller Servocom and the electro-hydraulic Servot-

win steering system to electronically controlled rear-ax-le steering systems and to semi-integral power-steering systems even for the heaviest trucks. In addition, Bosch also produces components such as operating cylinders, steering shafts, steering pumps or bevel gearboxes.

The foundation for CV-driver assistance systems

Electric power-steering systems are gradually prevailing at the commercial-vehicle sector as well. The innovative Servotwin electro-hydraulic steering system presented at the IAA CV 2014 in Hannover is the first step into the electrification of commercial-vehicle steering systems. It paves the way for the implementation of driver assistance systems in commercial vehicles.



Steering trucks safely and highly accurate with hydraulic assistance

Precise directional changes with buses



1 Servocom – the truck standard

Reliable and compact ball-nut power-steering system for trucks and buses – also applicable as dual-circuit steering system for high steering-axle loads or several steered axles.

2 Steering pumps

The range consists of vane pumps, energy-saving vane pumps (e.g. the variable-displacement pump Varioserv), tandem pumps combining vane and gear pumps and radial-piston pumps as emergency-steering pump for trucks.

3 Steering shafts

Ball-track telescopic shafts or ball-track relay shafts with additional universal joints ensure steady steering despite possible movements between driver cab and chassis.

Replacement parts

Value-based repairing with Bosch eXchange

Particularly for older vehicles with high mileage, Bosch eXchange provides repair solutions paying off for professional logistics companies. Including a 100 % warranty – just like for new parts.

4 Bevel gearboxes

redirect the steering movement of trucks and buses if the position of the driver or the steering gearbox impedes a direct connection to the steering column.









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