

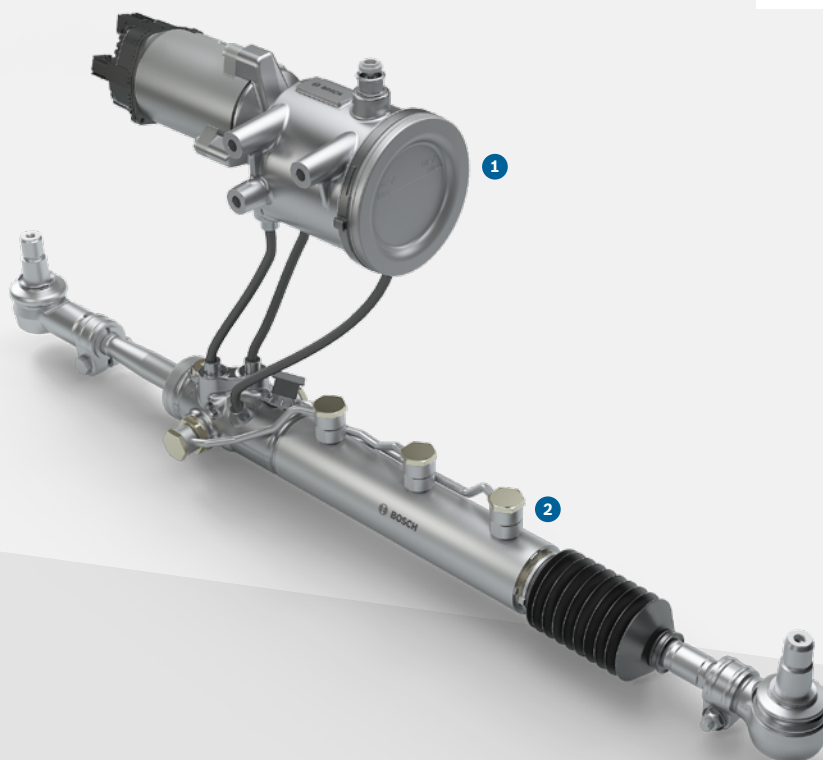
Steering systems

Rear axle steering system



BOSCH

Invented for life



PRODUCT BENEFITS

- ▶ Smaller turning circle
- ▶ Reduced tire wear
- ▶ Compact construction
- ▶ Light weight
- ▶ Fuel savings
- ▶ Increased maneuverability
- ▶ Easy installation

- 1 Power unit with integrated control unit
- 2 Steering cylinder with integrated position sensor



Power-on-demand

The electrohydraulic rear axle steering system only uses energy when steering is actually occurring.

TASK

The electrohydraulic rear axle steering system is a stand-alone power-on-demand system for steering the pusher axle or the tag axle of heavy commercial vehicles. It is the result of an innovative combination of a hydraulic cylinder unit and an electronic power unit. The system makes it possible to steer pusher and trailing axles on vehicles with three or more axles.

FUNCTION

The rear axle steering system consists essentially of two components: the cylinder unit with integrated position sensor and valve system, and the power unit, consisting of a motor-driven pump and control unit. The ever more demanding requirements faced by commercial vehicles in today's transportation industry can only be satisfied on the rear axle through use of an innovative steering system with electronic interface. With the system, the linking of the rear axle steering to the vehicle's electrical system is now possible. The available vehicle signals (e.g. steering angle of the front axle) on the CAN bus are transmitted to the integrated control unit (ECU). From these signals, the rear axle steering system determines the desired steering angle of the rear axle and controls the pump by means of the electric motor on the basis of the target-actual comparison. The volume-flow generated acts on the particular piston surface of the cylinder unit and moves the cylinder's piston rod in or out, until the integrated position sensor gives the return signal, that the target position has been reached. The wheels on

21 W

are required, on average, for operation of the rear axle steering system.

-0.6 l/100 km

lower fuel consumption – compared to conventional electrohydraulic rear axle steering systems

the axle are turned to the desired angle by coupling the cylinder unit to a control arm, which transmits the steering forces via the tie rods. With its freely programmable and plug-and-play capability, the independent and compact construction makes it possible to steer several axles on a vehicle through use of several rear axle steering systems.

To protect the steering system against overloading when the wheels are turned to the full-lock position, an electronic stop can be programmed. The control unit then decreases the flow from the pump as soon as the programmed end stop is reached so that the mechanical stops are not damaged.

TECHNICAL CHARACTERISTICS

Piston rod force	41/52 kN (retract/extend)
Max. pressure	185 bar
Installed length	1,000 mm +/- 95 mm
Operating temperature	-32 °C to +80 °C
Surface treatment	DIN EN ISO 9227 - 480 h
Operating voltage	24 V DC
Weight	24 kg

- 1 Electric motor with ECU
- 2 Oil tank with pump
- 3 Steering cylinder with integrated position sensor
- 4 Valve system

