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Steering System of Motor Vehicles—Basic Requirements
汽车转向系基本要求

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Steering System of Motor Vehicles—Basic Requirements

1 SCOPE

This document specifies the technical requirements for steering system of motor vehicles and the criteria for determination of the same type, and describes the corresponding test methods.

This document is applicable to the vehicles of Categories M, N and O specified in GB/T 15089.

This document doesn't apply to:

- Steering system with a pneumatic transmission;
- Vehicles equipped with the autonomous steering system.

Note: Autonomous steering system means a complex electronic control system integrated with the vehicle, other than an automated driving system (ADS), that causes the vehicle to follow a defined path or to alter its path in response to signals received and transmitted from off-board the vehicle. The driver will not necessarily be in primary control of the vehicle.

2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB/T 3730.1	Motor vehicles and trailers - Types -Terms and definitions
GB/T 3730.2	Road vehicle-Masses-Vocabulary and codes
GB/T 3730.3	Motor vehicles and towed vehicles-Dimensions of vehicles-Terms and definitions
GB/T 5053.3	Road vehicles - Connectors for the electrical connection of towing and towed vehicles - Definitions tests and requirements
GB/T 5563	Rubber and Plastics Hoses and Hose Assemblies - Hydrostatic Testing
GB/T 7939.3	Connections for hydraulic fluid power - Test methods- Part 3: Hose assemblies
GB/T 9574	Rubber and plastics hoses and hose assemblies-Ratios of proof and burst pressure to maximum operating pressure
GB/T 12540	Minimum turning circle diameter, minimum turning clearance circle diameter and out value test method for motor vehicles
GB12676	Technical requirements and testing methods for commercial vehicle and trailer braking systems
GB/T 15089	Classification of power-driven vehicles and trailers
GB/T 20716.1-2025	Road vehicles - Connectors for the electrical connection of towing and towed vehicles (7-pole)- Part 1: Connectors for braking systems and running gears of vehicles with 24 V nominal supply voltage
GB/T 20718-2006	Road vehicles-Connectors for the electrical connection of towing and towed vehicles-13-pole connector for vehicles with 12V nominal supply voltage
GB21670	Technical requirements and testing methods for passenger car braking systems
GB/T 34590 (All Parts)	Road Vehicles - Functional Safety
GB 34660	Road vehicles—Requirements and test methods of electromagnetic compatibility

3 TERMS AND DEFINITIONS

For the purpose of this document, the terms and definitions given in GB/T 3730.1, GB/T 3730.2, GB/T 3730.3, GB/T 12540, GB/T 15089 and GB/T 34590.1 as well as the followings apply.

3.1 Basic Terms

3.1.1 Steering system and equipment

3.1.1.1 steering system

the system used to alter or maintain the driving direction of the vehicle

Note: it consists of steering control equipment, steering transmission equipment, steered wheels, and energy supply equipment (if any).

[Source: GB/T35360-2017, 2.1, modified]

3.1.1.2 steering control equipment

the operating mechanism of the steering system which controls steering operation, with or without direct intervention of the driver

Note: For the steering system in which the steering forces are provided solely or partly by the muscular effort of the driver, the steering control equipment includes all parts up to the point where the steering force is transformed by mechanical, hydraulic or electrical means.

3.1.1.3 steering transmission equipment

the combination of all components which forms a functional link between the steering control equipment and the steered wheels and realizes control transmission and/or energy transmission

Note: The steering transmission equipment is generally divided into mechanical, hydraulic and electrical transmission equipment, or combinations thereof, according to the control and/or energy transmission means.

3.1.1.3.1 control transmission

the function by means of which control signals are transmitted for control of the steering equipment

3.1.1.3.2 energy transmission

the function by means of which the energy is transmitted to the steered wheels to control/regulate the steering

3.1.1.4 steered wheels

the wheels, the movement direction of which may be altered directly or indirectly in relation to the longitudinal axis of the vehicle, in order to control the movement direction of the vehicle

Note: it includes such components as steering knuckle and kingpin.

3.1.1.5 energy supply equipment

the equipment in the steering system which is intended to provide energy, control energy distribution, and store energy

Note: It includes storage reservoirs, lines, wiring harness, and medium, etc., but doesn't include the engine (except the case where the engine provides the power assisted steering system with energy) or its drive to the energy source.

3.1.1.5.1 energy source

the component which provides the energy in the required form

3.1.1.5.2 energy reservoir

the component of the energy supply equipment which stores the energy

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