

ICS 43.020



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Location of hand controls, indicators and tell-tales in motor
vehicles**

(English Translation)

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1 Scope

This document specifies the requirements for the arrangement location of vehicle controls, the requirements for stalk control mode, the requirements for the functional combination of multi- function controls, and the display visibility requirements for indicators and tell-tales.

This document is applicable to Category-M and Category-N vehicles.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB 4094 Symbols for Controls, Indicators and Tell-tales of Motor Vehicles

GB/T 4094.2 Electric Vehicles - Symbols for Controls, Indicators and Tell-tales

GB/T 4782 Road Vehicles - Controls, Indicators and Tell-tales - Vocabulary

GB/T 12673 Motor Vehicle Main Dimensions Measurement Method

GB/T 15089 Classification of Power-driven Vehicle and Trailers

GB/T 29120 Procedure for H-point and R-point Determination (GB/T 29120-2012, ISO 6549:1999, ISO 20176:2006, MOD)

3 Terms and Definitions

The terms and definitions defined in GB 4094, GB/T 4094.2, GB/T 4782, GB/T 12673, GB/T

15089 and GB/T 29120, and the following terms and definitions are applicable to this document.

3.1

reference plane

A vertical plane parallel to the longitudinal axis of the motor vehicle, passing through the steering-wheel axis, and within an area of 50 mm on either side of the designed R-point of the driver's seat.

Description of indexes:

1---display area used by the pointer;

2---display area for other information.

Figure 2 -- Example of Indicator Display Area

3.4

steering-wheel plane

The plane tangent to the upper surface of the steering wheel rim as set by the vehicle manufacturer, with the wheels in a straight-ahead position.

3.5

steering-wheel axis

A straight line passing through the center of rotation of the steering wheel rim and perpendicular to the steering-wheel plane.

3.6

zone 1

The zone located on the left side of the reference plane, and enclosed by the following planes:

---a plane parallel to the steering-wheel plane and at a distance of 20 mm above it;

---a plane parallel to the steering-wheel plane and at a distance of 170 mm below it;

---a cylindrical surface extending 100 mm outward along the outer edge of the steering wheel rim, with its axis coinciding with the steering-wheel axis;

---a cylindrical surface extending 130 mm inward along the inner edge of the steering wheel

rim, with its axis coinciding with the steering-wheel axis;

---two planes passing through the steering-wheel axis, and the intersection of the two planes with the steering-wheel plane and the reference plane constitute 40° and 130° .

EXAMPLE: see Figure 3.

3.7

zone 2

The zone enclosed by the following planes:

---a plane parallel to the steering-wheel plane and at a distance of 20 mm above it;

---a plane parallel to the steering-wheel plane and at a distance of 170 mm below it;

---a cylindrical surface with a radius of 50 mm, with its axis coinciding with the steering-wheel axis.

EXAMPLE: see Figure 3.

NOTE 2: see Figure 4.

4 Requirements for the Arrangement and Location of

Controls

4.1

The controls include mechanical controls and virtual controls.

4.2

The arrangement and location of the mechanical controls shall satisfy the requirements of 4.3 ~ 4.16. The arrangement and location of the virtual controls should be visible and easy to operate.

4.3

For Category-M1 vehicles, all controls listed in 4.4 ~ 4.16 shall be arranged within the driver's hand control area. For Category-M2, Category-M3 and Category-N vehicles, the controls listed in 4.4 ~ 4.16 shall be arranged within the driver's hand control area when wearing a seat belt.

4.4

If the following devices are controlled by the controls, the operational area of the controls shall be arranged in zone 1:

---headlights (high beam, switching between high beam and low beam, and low beam);

---headlight warning (instantaneous high beam warning);

---turn-signal indicator.

4.5

The master lighting switch shall be arranged on the left side of the reference plane.

4.6

Part of the operational area of the audio (for example, honking horn) controls shall be arranged in zone 1 or zone 2. The auxiliary audio (for example, low-speed tone) controls may be arranged elsewhere, or the operational area can be extended beyond zone 1 and zone 2.

4.7

The parking brake hand control devices shall be arranged on the right side of the reference plane. If space is required, the parking brake hand control devices may also be arranged on the left side of the reference plane.

4.8

The retarder hand controls should be arranged on the right side of the reference plane.

4.9

The shift controls (except paddle shifters) shall be arranged on the right side of the reference plane.

4.10

The windshield washer and wiper controls may be arranged on either side of the reference plane. If there are two or more stalk controls (except the gear shift lever) in zone 3, the windshield washer or wiper shall be operated by the stalk control closest to the steering wheel rim in the operational area of control.

4.11

The ignition switch controls shall be arranged on the right side of the reference plane. For Category-M2, Category-M3 and Category-N vehicles, the ignition switch controls may be arranged on the left side of the reference plane, so as to facilitate operation from outside the vehicle.

NOTE: when starting the vehicle from the outside, additional safety measures shall be considered.

4.12

All or part of the hazard warning controls shall be arranged on the right side of the reference plane. For Category-M2, Category-M3 and Category-N vehicles, the hazard warning controls may be arranged on the left side of the reference plane, so as to facilitate operation from outside the vehicle.