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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 12673-2019

Replacing GB/T 12673-1990

Motor vehicle main dimensions measurement method

汽车主要尺寸测量方法

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1 Scope

GB/T 12673-2019 is the Chinese national standard on motor vehicle main dimensions measurement method, in the field of road vehicles engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 18 October 2019 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 May 2020. Classification: ICS 43.020, CCS T04. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies motor vehicle main dimensions measurement method. The external dimensions and luggage/ cargo dimensions measurement methods that are specified in this Standard are applicable to M and N vehicles; other vehicles can implement by reference. The internal dimensions measurement methods that are specified in this Standard are applicable to M1 vehicles; other vehicles can implement by reference.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB 1589, Limits of dimensions, axle load and masses for motor vehicles, trailers and combination vehicles

GB/T 3730.2, Road vehicle - Masses - Vocabulary and codes

GB/T 3730.3-1992, Motor vehicles and towed vehicles - Dimensions of vehicles - Terms and definitions

GB/T 19514, Passenger cars - Luggage compartments - Method of measuring reference volume

GB/T 29120-2012, Procedure for H-point and R-point determination

3 Terms and definitions

Terms and definitions determined by GB 1589, GB/T 3730.2, GB/T 3730.3-1992, GB/T 29120-2012, and the following ones are applicable to this document. For ease of use, some of the terms and definitions in GB/T 29120-2012 are repeated below.

3.1 Vehicle coordinate system It consists of three perpendicular orthogonal planes that are used to determine the positional relationship of planes, axes, and points, as shown in Figure 1. Figure 1 -- Vehicle coordinate system

3.1.4 Y-plane The plane parallel to the zero Y-plane.

3.1.5 X-plane The plane parallel to the zero X-plane.

3.2 H-point and H-point measurement machine

3.2.1 H-point In HPM, H-point is the rotation center of torso and thigh, which simulates the hinge center of the human torso and thigh; it is used to determine the actual H- point of the seat. In HPM-II, H-point is the hinge center point of the seat plate assembly and the back-plate assembly, which is located on the lateral center line of HPM-II or HPD.

3.2.2 Actual H-point In HPM, the seat is located at the ride base point that is specified by the manufacturer.

3.2.3 R-point The designed H-point position that is set by the manufacturer, which is specifically designated as the R-point or SgRP and meets all the following requirements.

3.2.4 H-point travel path All possible positions of H-point under all adjustment states (including horizontal, vertical and tilt) of the specified seating position. [GB/T 29120-2012,

Definition 3.9]

3.2.5 Three-dimensional H-point machine; HPM The device that is used to measure the actual H-point and the actual torso angle on a vehicle. [GB/T 29120-2012, Definition 3.1]

3.3 Passenger reference point and reference plane

3.3.1 Knee point K-point The hinge point of the thigh and leg on the H-point measurement machine, as shown in Figure 2.

3.6 Gross vehicle mass; GVM "Maximum allowable total mass" of a motor vehicle that is defined in GB/T 3730.2.

Note. in kilograms (kg).

3.7 Dimension codes Each dimension in this Standard specifies a code, which is generally composed of letters and numbers. Different measurement positions and measurement conditions are distinguished by added suffixes.

4 Measurement preparation

4.1 Measurement site The measurement site shall have a supporting surface of horizontal hard covering.

4.2 Vehicle status

4.2.1 Unless otherwise specified, it shall be measured under the vehicle's curb weight. For part-dimension measurement, it can be carried out with some necessary measuring instruments and 1 or 2 measuring personnel.

4.2.4 Unless otherwise specified, when the motor vehicle is equipped with adjustable or movable parts, it shall be measured in the following prescribed state.

4.3 Measurement benchmark

4.3.1 Unless otherwise specified, the length shall be measured on a straight line parallel to the X-axis direction; the width shall be measured on a straight line parallel to the Y-axis direction; the height shall be measured on a straight line parallel to the Z-axis direction.

4.3.2 If the sides of the vehicle are symmetrical, measure only the left or right side.

4.3.3 Unless otherwise specified, the internal dimensions of the vehicle shall be measured on the center line of occupant. When the H-point measurement machine is used for measurement, it should use HPM-II, and the leg length should be adjusted to the position of the 95th percentile. In order to make the measurements consistent, it should use the formula for the H-point travel path of the seat that is given in Appendix B.

5 Dimension codes

5.1 Dimension codes and definition The capital letters in Table 2 indicate the measured dimension classification code.

5.2 Number segmentation The number segmentation in Table 3 represents different dimension types.

5.3 Suffix

5.3.3 Luggage compartment/ cargo dimension suffix For vehicles that can increase the luggage compartment/ cargo volume after the seat is folded, for the same category of luggage compartment/ cargo dimensions that are involved in different rows of seats, keep the letters and numerical codes the same; add the suffix in Table 6 to distinguish the measurement positions.

5.3.4 Special suffix For the internal dimensions, external dimensions, luggage compartment/ cargo or rear component dimensions, some special measurement conditions and measurement positions in the special dimensions of motor vehicle, keep the letters and numerical codes consistent; add the special suffix in Table 7 to distinguish the conditions or positions.

6 Determination of the zero plane and the base point

6.1 Determination of the zero plane Dimensions in Table 8 are used to determine the zero plane of the vehicle.

6.2 Determination of the base point Dimensions in Table 9 are used to determine the base point of the vehicle.

7 Dimension codes, name and measurement methods of internal dimensions

7.1 Internal dimension - length Table 12 specifies the measurement methods of internal length of the vehicle.

7.2 Internal dimension - width Table 13 specifies the measurement methods of internal width of the vehicle.

7.3 Internal dimension - height Table 14 specifies the measurement methods of internal height of the vehicle.

8 Dimension codes, name and measurement methods of external dimensions