

Translated English of Chinese Standard: GB11562-2014

www.ChineseStandard.net

Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 43.040.60

T 26

GB 11562-2014

Replacing GB 11562-1994

Motor Vehicles forward Visibility for Drivers - Requirements and Measurement Methods

GB 11562-2014 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: December 31, 2014

Implemented on: July 1, 2015

**Issued by: General Administration of Quality Supervision, Inspection and Quarantine;
Standardization Administration of PRC.**

Table of Contents

Foreword.....	3
1 Scope	6
2 Normative References.....	6
3 Terms and Definitions.....	6
4 Technical Requirements	12
5 Measuring Conditions.....	14
6 Determination Method of Driver's Field of Vision.....	17
Appendix A (Informative) Comparison between Clause Numbers of this Standard and Clause Numbers of ECE R 125	20
Appendix B (Normative) Determination Method of Dimensional Relationship between Primary Reference Marks of Vehicle and Three-Dimensional Coordinate System	23
Appendix C (Normative) Determination Procedures of Vehicle Riding Position H Point and Actual Seat-Back Angle	26

Foreword

The Clause 4, 5, 6 of this Standard are mandatory, while the rest are recommended.

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard replaced GB 11562-1994 *Motor Vehicles – Forward Visibility for Drivers – Requirements and Measurement Methods*; the major differences between this Standard and GB 11562-1994 are as follows:

- a) Delete GB/T 11563 *Motor Vehicles – Procedure for H-Point Determination*, GB/T 11559 *Motor Vehicles – Use in Defining their Seating Accommodation – Three-Dimensional H-Point Machine* (these two standards are obsolete) from the normative references;
- b) Change the term of “three-dimensional coordinate system” in the original standard into “three-dimensional reference gird”; and add the following terms and definitions:
 - Vehicle type with regard to the field of vision (see Sub-clause 3.1);
 - Armoured vehicle (see Sub-clause 3.11);
 - Extended seat-adjustment range (see Sub-clause 3.18);
 - The angle of obstruction of the A pillar on the driver’s side (see Sub-clause 3.19);
 - The angle of obstruction of the A pillar on the passenger side (see Sub-clause 3.20);
 - Area “S” (see Sub-clause 3.21);
 - Reference data (see Sub-clause 3.22);
 - Three-dimensional H point machine (see Sub-clause 3.23);
 - Torso-line (see Sub-clause 3.24);
 - Center plane of occupant (see Sub-clause 3.25);
 - Fiducial marks (see Sub-clause 3.26);
 - Vehicle measuring attitude (see Sub-clause 3.27);
- c) Add the technical requirements for “armoured (bulletproof) vehicle” (see Sub-

clause 4.2 of this Standard; Sub-clause 5.1.2 of ECE R125)

- d) Add the requirements for steering wheel adjustable vehicle (see Sub-clause 4.4.1 of this Standard; Sub-clause 5.1.3.1 of ECE R125)

This Standard adopts the re-drafting method to modify and use the Economic Commission for Europe ECE R125 Rev.2/Add.124/Amend.3 (2011 Edition) *Uniform Provisions Concerning the Approval of Motor Vehicles with regard to the Forward Field of Vision of the Motor Vehicle Driver*.

The comparison list between the clause numbers of this Standard and clause number of ECE R125 Regulation can refer to Appendix A of this Standard.

The technical differences and causes between this Standard and ECE R 125 Regulation are as follows:

- Delete Sub-clause 1.2, 1.3 in Clause 1 of ECE R125 for the purpose of satisfying the rules of GB/T 1.1-2009, and meeting the requirements for motor vehicles driving on the right side of the road in China.
- Delete Clause 3 “Application for Certification”, Clause 4 “Certification”, Clause 7 “Changes and Expansion of Vehicle Types”, Clause 8 “Production Consistency”, Clause 9 “Punishment on Non-Production Consistency”, Clause 10 “Shut down”, Clause 11 “Addresses and Names of Testing Agencies and their Administrative Agencies”, information of manufacturer applying for certification in Annex 1, format of certification marks in Annex 2, etc. for the purpose of keeping consistent China’s motor vehicle management system, and for the benefit of the implementation and operation of this Standard.

For the sake of usage, the following editorial changes are made against the ECE R125 Regulation:

- a) Change cm² into mm²;
- b) Add informative appendix.

This Standard was proposed by Ministry of Industry and Information Technology of the People’s Republic of China.

This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Automobiles (SAC/TC 114).

Drafting organizations of this Standard: Dongfeng Motor Corporation, Natinoal Automobile Quality Supervision and Test Center (Xiangyang), China FAW Co., Ltd. R&D Center, China Quality Certification Center, European Automobile Manufacturers’ Association, Hubei Qixing Truck and Cabin Manufacturing Co., Ltd., and China National Accreditation Service for Conformity Assessment.

Motor Vehicles forward Visibility for Drivers

- Requirements and Measurement Methods

1 Scope

This Standard specifies the requirements and measurement methods of the direct visual field within 180° range in front of the driver.

This Standard is applicable to the Type-M1 automobile.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB 11555-2009 Motor Vehicles- Windshield Demisting and Defrosting Systems – Performance Requirements and Test Methods

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Vehicle type with regard to the field of vision

The vehicles with no difference in the following aspects:

- The external and internal shapes and arrangement that may influence the field of vision within 180° range in front of the driver;
- Shape, dimension and installation mode of front windshield glass.

3.2 Three-dimensional reference grid

The coordinate system consisting of three orthogonal datum planes that is determined by the vehicle manufacturer at the initial design stage (see Figure B.1). These three datum planes are as follows:

X datum plane --- vertical plane perpendicular to the Y datum plane; usually defined

by passing the left and right front wheel center;

Y datum plane – vehicle longitudinal symmetry plane;

Z datum plane – the horizontal plane perpendicular to the Y and X datum planes.

The three-dimensional coordinate system is used to determine the dimension relationship between the positions of design points on the drawing and the positions of these points on the vehicle.

The coordinate value relevant to zero plane shall be determined on the basis of vehicle running state plus a front passenger [passenger mass is (75 ± 1) kg].

If the vehicle is equipped with an adjustable clearance suspension away from the ground, it shall be tested in the state of normal use specified by the vehicle manufacturer.

3.3 Primary reference marks

The holes on the vehicle body, surface, mark, identification symbols. The type of used reference marks and the positions of each mark on the X, Y, Z coordinates of the three-dimensional coordinate system, and on the relative design ground level shall be specified by the vehicle manufacturer. These reference marks can be used as the control points for the vehicle body assembly.

3.4 Seat-back angle

The angle between the seat-back and the vertical line.

3.5 Actual seat-back angle

The angle between the vertical line of H point and torso-line of three-dimensional H point machine when the seat is in the lowest and most rear positions within the normal range. The actual seat-back angle is theoretically equivalent to the designing seat-back angle.

3.6 Design seat-back angle

The angle between the vertical line of R point and torso-line of three-dimensional H point machine on the seat-back position specified by the vehicle manufacturer.

3.7 V points

In the passenger compartment, pass through the longitudinal vertical plane of the centerline position of front outside seat; it is relevant to the R point and design seat-back angle. Such point is used for checking whether the visual field of vehicle meets the requirements.

The normal range of the driver's seat adjusted in the X-axis direction as specified by the vehicle manufacturer.

3.18 Extended seat-adjustment range

The range of the seat adjusted upward in the X-axis direction beyond the normal range specified in Sub-clause 3.17, and also specified by the vehicle manufacturer; so that convert the seat into bed or facilitate to access to the vehicle.

3.19 The angle of obstruction of the A pillar on the driver's side

The angle between straight line passing through E_2 point and paralleling to the tangent line of the outer edge of S_2 section that passes through E_1 point, and the tangent line of the inner edge of the S_1 section that passes through E_2 point on the horizontal plane (see Figure 3).

3.20 The angle of obstruction of the A pillar on the passenger side

The angle between the tangent line of inner edge of S_1 section that passes through E_3 point, and straight line passing through E_3 point and paralleling to the tangent line of the outer edge of S_2 section that passes through E_4 point (see Figure 2).

3.21 Area "S"

The area "S" (see Figure 7) refers to a quadrilateral vertical region in a plane perpendicular to the X-axis at 1500mm position before the V_2 point. The upper border of the area "S" is determined by the intersection line between plane passing through V_2 point forward and inclined by 1° from the horizontal plane, and the horizontal vertical plane at 1500mm position before V_2 point. The lower border of area "S" is determined by the intersection line between plane passing through V_2 point forward and inclined by 4° from the horizontal plane, and the horizontal vertical plane at 1500mm position before V_2 point. The left and right borders of area "S" is determined by vertical line generated by the intersection point between the intersection line of three planes inclined 4° as defined in Sub-clause 4.4 and horizontal vertical plane at 1500mm position before V_2 point. In case the windshield glass stretched forward by more than 1500mm against the V_2 point, the distance between area "S" and V_2 point can be increased correspondingly.

3.22 Reference data

One of the following features of a riding position:

- a) "H" point, "R" point, and their relationship;
- b) Actual seat-back angle, design seat-back angle, and their relationship.

3.23 Three-dimensional H point machine

Machine used for determining the “H” point and the actual seat-back angle (see Figure C.1). The description for this machine can refer to Clause C.4 of Appendix C.

3.24 Torso-line

The centerline of probe bar when three-dimensional H point machine is located in the most rear position.

3.25 Center plane of occupant (CP/O)

The center plane of three-dimensional H point machine placed at each designated riding position, which is indicated by the “H” point coordinate on the “Y” axis. For the single seat, the center plane of seat is the center plane of occupant; for other seats, the center plane of occupant shall be specified by the manufacturer.

3.26 Fiducial marks

The point (hole, face, mark, or indentation) on the vehicle body specified by the manufacturer.

3.27 Vehicle measuring attitude

The vehicle position determined by the coordinates of fiducial marks on the three-dimensional coordinate system.

4 Technical Requirements

4.1 The windscreen transparent area shall include at least the windscreen datum points. These datum points (see Figure 1) are as follows:

- Datum point a inclined 17° left at V_1 point level forward;
- Datum point b inclined 7° upward along the vertical plane at V_1 point forward;
- Datum point c inclined 5° downward along the vertical plane at V_2 point forward;
- Increase three auxiliary datum points a' , b' , c' on the other side of the longitudinal symmetry plane of the vehicle, which are symmetrical to the three datum points of a, b, c.

4.2 The binocular obstruction angle of each A pillar doesn't exceed 6° (see Figure 3); for armoured vehicle, such angle shall not exceed 10° . If the A pillar on the driver's side and passenger side is symmetrical with respect to the longitudinal vertical plane of vehicle center, then the angle of obstruction of the A pillar on the passenger side doesn't need to be measured again.

4.3 Each vehicle shall be no more than two A pillars.

state; see Table 2 and 3. The corrected value of the design seat-back angle beyond 25° can refer to Table 4.

6.4 Make two horizontal cross-sections on A pillar as shown in Figure 2, namely,

- a) S_1 cross-section on A pillar: make the plane from P_m point forward, which forms 2° with the horizontal plane upward; make horizontal plane passing through the forefront intersection point between the above plane and A pillar;
- b) S_2 cross-section on A pillar: make the plane from P_m point forward, which forms 5° with the horizontal plane downward; make horizontal plane passing through the forefront intersection point between the above plane and A pillar;
- c) Project S_1 , S_2 cross-sections into the horizontal plane where P points are located; measure the binocular obstruction angle on such plane, see Figure 3.

6.4.1 Rotate the line connecting E_1 and E_2 around P_1 ; so that the tangent line from E_1 to the outer side of S_2 cross-section on the left A pillar forms right angle with the line connecting E_1 and E_2 ; make tangent line from E_1 to the outer side of S_2 cross-section on the left A pillar, and make tangent line from E_2 to the inner side of S_1 cross-section on the left A pillar; make the parallel line from E_2 against the former tangent line; then it forms filed of vision on the plane with the latter tangent line, which is called an angle of obstruction of the A pillar on the driver's (left) side (see Figure 3).

6.4.2 Rotate the line connecting E_3 and E_4 around P_2 ; so that the tangent line from E_3 to the outer side of S_2 cross-section on the right A pillar forms right angle with the line connecting E_3 and E_4 ; make tangent line from E_3 to the inner side of S_1 cross-section on the right A pillar, and make tangent line from E_4 to the outer side of S_2 cross-section on the right A pillar; make the parallel line from E_3 against the latter tangent line; then it forms filed of vision on the plane with the former tangent line, which is called an angle of obstruction of the A pillar on the driver's (right) side (see Figure 3).

6.5 The manufacturer can measure the obstruction angle directly from the vehicle or drawing. If the testing agency doesn't endorse such data provided by the manufacturer in this manner, then it shall be verified on the vehicle.

Appendix C

(Normative)

Determination Procedures of Vehicle

Riding Position H Point and Actual Seat-Back Angle

C.1 Objectives

The procedures described in this Appendix are used for determining the “H” point for one or several riding positions of vehicle, and the actual seat-back angle; as well as the relationship between the testing and measuring data and the design technical requirements given by the vehicle manufacturer. ¹⁾

C.2 Requirements

C.2.1 Data providing

In order to demonstrate the compliance with the provisions of this Standard, the following all or appropriately selected data shall be provided according to the format specified in Appendix C.6 against each riding position that requires to provide reference data:

- a) The coordinate of “R” point in the three-dimensional coordinate system;
- b) Design seat-back angle;
- c) All data required to adjust the seat (if adjustable) to the measuring position specified in Appendix C.3.3.

C.2.2 Relationship between measuring data and design requirements

C.2.2.1 Compare the “H” point coordinate and actual seat-back angle obtained through the procedures specified in Appendix C.3 with “R” point coordinate and design seat-back angle given by the manufacturer.

C.2.2.2 If “H” point determined by the coordinates is located in the horizontal and vertical directions with length of 50mm, and in the square with the diagonal lines intersecting in “R” point; the deviation of actual seat-back angle from the design seat-back angle is less than 5°; for the above riding positions, the relative positions of “R” point and “H” point, as well as the relationship between the actual seat-back angle and design seat-back angle satisfy the requirements.

¹⁾ For any non-front passenger seat, if “H” point can’t be determined by “three-dimensional H point machine” or procedures, so long as the testing agency approved, it can use “R” point marked by the manufacturer as a reference.

placed too close to the edge, and may on the edge of the seat, so that 3-D H point can't be horizontal, then three-dimensional H point machine can move inside against the C/LO.

C.3.6 Install the feet and leg assembly onto the floor assembly; it can be installed separately, or use T-shaped bar and leg assembly to install. The straight line passing two "H" mark buttons shall be parallel to the ground and perpendicular to the longitudinal center plane of the seat.

C.3.7 Adjust the feet and leg positions of the three-dimensional H point machine as follows:

C.3.7.1 Designated riding positions: driver, front outside passengers

C.3.7.1.1 Move the feet and leg assembly forward, so that the feet are naturally placed on the floor; if necessary, place between the operating pedals. If possible, make the distance between the left, right foot and the center plane of three-dimensional H point machine the same. If necessary, re-adjust the seat plate or adjust it backwards.

The feet and leg assembly make the level gauge horizontal, which horizontally positioning the three-dimensional H point machine. The straight line passing the two "H" point mark buttons is perpendicular to the longitudinal center plane of the seat.

C.3.7.1.2 If the left leg can't be kept parallel to the right leg, left leg can't fall on the ground, move the left leg to fall on the ground. The straight line passing the two mark buttons is perpendicular to the longitudinal center plane of the seat.

C.3.7.2 Designed riding positions: for the rear seats or auxiliary seats

The positions of two legs shall be adjusted as per the regulations of the manufacturer. If the two feet fall on the floor positions with different height, the other foot shall be placed on the basis of the foot which firstly touches the front seat, so that the horizontal level gauge on the seat plate of such machine can indicate the level.

C.3.7.3 Other designated riding positions

Abide by the general procedures of C.3.7.1; however, the positions of feet shall be placed according to the provisions of the vehicle manufacturer.

C.3.8 Install the calf and thigh weights and level the three-dimensional H point machine.

C.3.9 Incline the backplane to the front limiting block, use T-shaped bar to pull off the three-dimensional H point machine away from the seat-back; then use one of

height, till the two feet no longer generate additional effects. In the process of lifting the feet, the two feet can rotate freely, exert no forward or lateral load. When each foot is put back to the lowered position, the device heel shall touch the support structure designed for it.

Check whether the horizontal level gauge is horizontal; if necessary, exert a lateral force to the top of the backplane to keep the horizontal level of seat plate of three-dimensional H point machine on the seat.

C.3.13 Pull the T-shaped bar, so that the three-dimensional H point machine can't slide forward on the seat cushion; then continue the following operations:

a) Put the backplane on the seat-back;

b) Alternatively exert and retract the backward horizontal force no greater than 25N to the seat-back angle bar (headspace probe rod) at approximately center height of torso weight of three-dimensional H point machine, till when the force is retracted, the hip angle protractor indicates to a stable position. At this time, ensure there is no additional downward or lateral force exerted on the three-dimensional H point machine. If the three-dimensional H point machine needs re-leveled again, then rotate the backplane forward, and repeat the procedures of C.3.12.

C.3.14 Measure the "H" point coordinate in a three-dimensional coordinate system. When the probe is in the most rear position, read the actual seat-back angle value on the back angle protractor of the three-dimensional H point machine.

C.3.15 If the three-dimensional H point machine needs to be reinstalled, the seat assembly shall remain at least 30min of no-load condition before the re-operation.

C.3.16 If the same row of seats (such as long seats, the same seats, etc.) are considered the same, then only one "H" point and an actual seat-back angle shall be determined. Place the three-dimensional H point machine described in this Appendix onto a representative location, which shall be as follows:

a) For the first row: the driver's seat;

b) For other rows: seats on outside.

C.4 Description of three-dimensional H point machine

C.4.1 Backplane and seat plate

The backplane and seat plate shall be made of the reinforce plastic and metal; they simulate the torso and thighs of the human body, and they mechanically hinged into the "H" point. One protractor is fixed on the probe bar hinged to the "H" point for measuring the actual seat-back angle. An adjustable thigh bar fixed on the seat plate defines the thigh centerline, and can serve as the baseline for the hip angle

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----