

INTERNATIONAL STANDARD

ISO 6549

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Road vehicles — Procedure for H- and R-point determination

Véhicules routiers — Procédure de détermination des points H et R



Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6549 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 13, *Ergonomics applicable to road vehicles*.

This second edition cancels and replaces the first edition (ISO 6549:1980), which has been technically revised.

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Road vehicles — Procedure for H- and R-point determination

1 Scope

This International Standard defines a three-dimensional H-point machine for use in the determination of the actual H-point and torso angle of a seat, for the purpose of comparing these measurements to the manufacturer's seating reference point and design torso angle. The three-dimensional H-point machine is intended to be used as a checking device for one designated seat position at a time and is not a device which measures or indicates an occupant's capabilities or comfort.

This International Standard is applicable to any motor vehicle where:

- a) the distance, vertically measured, between the operator heel point and the seating reference point is less than 550 mm,
- b) the torso angle is greater than 5° rearward of vertical or where the attitude of the thigh centreline as indicated by the thigh bar is greater than 5° above the horizontal.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3833, *Road vehicles — Types — Terms and definitions*.

ISO 4130, *Road vehicles — Three-dimensional reference system and fiducial marks — Definitions*.

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 3833 and the following apply.

3.1

three-dimensional H-point machine

device used for the determination of the actual H-point and actual torso angle in a vehicle

3.2

H-point

pivot centre of the torso and thigh of the three-dimensional H-point machine which simulates the pivot centre of the human torso and thigh and is used for actual H-point determination

NOTE It is located on the centreplane of the device which is midway between the H-point sight buttons on either side of the H-point machine.

3.2.1**seating reference point****R-point****SgRP****design H-point**

manufacturer's intended location for a design H-point, which is specifically designated as R-point or SgRP, and which:

- a) is the fundamental reference point used to establish occupant accommodation tools and dimensions;
- b) simulates the position of the pivot centre of the human torso and thigh;
- c) has coordinates established with respect to the designed vehicle structure;
- d) establishes the rearmost normal design driving or riding H-point location of each designated seating position, which accounts for all modes of adjustment: horizontal, vertical and tilt that are available for the seat, but does not include seat travel used for purposes other than normal driving and riding

3.2.2**actual H-point**

H-point measured at the pivot centre of the torso line and thigh bar centreline of the three-dimensional H-point machine using one of the appropriate leg lengths shown in Figure 1, with the seat positioned at the seating reference point as specified by the manufacturer

3.3**torso angle**

angle from vertical in side view of the lower flat portion of the torso pan of the H-point machine

3.3.1**torso line**

centreline of the headroom probe in its fully rearward position against the torso pan of the three-dimensional H-point machine

See Figure 2.

NOTE The torso line intersects the H-point and is parallel to the flat portion of the torso pan that defines torso angle.

3.3.2**actual torso angle**

angle measured between a true vertical line through the actual H-point and the torso line of the three-dimensional H-point machine installed in accordance with clause 5

NOTE Torso angle is read from an indicator, called the hip angle quadrant, located just below the torso angle level on the H-point machine.

3.3.3**design torso angle**

angle measured between a true vertical line through the seating reference point and the torso line

NOTE This angle is specified by the manufacturer.

3.4**centreplane of occupant (C/LO)**

Y-coordinate of the R-point, in each designated seating position

NOTE In vehicles with individual seats, the centreplane of the seat represents the centreplane of the occupant. On bench seats, the centreplane of the occupant is specified by the manufacturer.

3.5**operator heel point**

intersection of the right heel of the three-dimensional H-point machine with the surface of the depressed floor covering or other heel support, when the driver's seat is positioned at the seating reference point