

KES

**Establishing the Driver's
Shin-Knee Contour
and Clearance**

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1. Scope of Application

This standard shall apply to examine the interference between driver's knee and instrument panel on acceleration, stop and getting on/off for sedans, passenger vehicles and trucks. It can also apply to the passenger's seat if the seat is individually adjustable.

2. Explanation of Terminology

2.1 Drivers' shin-knee contour

When the foot is not keeping on the acceleration pedal or is on the toeboard, it represents 95% lie shape of drivers' shin-knee. It is positioned by the vertical height, which is based on A.H.P (Accel Heel Point) and mid seat height of drivers.

2.2 SgRP(Seating Reference Point)

Design reference point of manufacturer is one design H-point and has meaning as follows.

2.2.1 Parallelism, verticality and slope for each seating position are considered in automobiles. Each seating position determines the very rear driving position and getting on position under the normal design conditions.

2.2.2 Designed automobile structure and related X, Y, Z coordinates are determined.

2.2.3 Human's torso and thigh pivot center position is determined.

2.2.4 Reference point is applied to located 2-D drawing template of 95th percentile leg, which is represented in SAE J826, APR80.

2.3 Design H-point

H-point is located on the drawing by H-point of 2-D drawing template, which is set on the determined seating position. If the determined seating position is adjusted, the path of design H-point determined design H-point travel line up to the maximum adjust range of seat. It is represented as 3-D by related coordinates to 3-D.

3. Sequence of L/Out

3.1 Application to accelerator pedal

3.1.1 The front most design H-point and SgRP are determined on the design H-point travel line and the distance between the two points is measured.

3.1.2 Mid point of the measured points is found and indicated.

3.1.3 The vertical height between A.H.P (Accel Heel Point) and mid point is measured.

This is mid-H-point height.

3.1.4 The vertical height between corresponding heel point to mid-H-point height and the highest point on knee is found on table 1.

3.1.5 Pivot of contour is located at A.H.P. When the vertical distance of horizontal line, which is adjoining AHP and the highest point on knee, becomes same as the vertical distance K on the table, arc of knee is moved to adjust.

3.1.6 Shin-knee template outline is drawn. (This is when the foot is not stepped on the accel pedal or is not on the toeboard)