



# SURFACE VEHICLE RECOMMENDED PRACTICE

J1516™

DEC2024

Issued 1985-10  
Revised 2011-10  
Reaffirmed 2024-12

Superseding J1516 OCT2011

Accommodation Tool Reference Point for Class B Vehicles

## RATIONALE

Previously this practice provided procedures for determining accommodation tool reference points and seating reference point for both Class A vehicles (Passenger Cars and Light Trucks) and Class B vehicle (Heavy Trucks and Buses). Procedures for Class A vehicles have been updated, removed from J1516 and J1517 and are now provided in SAE J4004 Positioning the H-Point Design Tool – Seating Reference Point and Seat Track Length. This practice has been revised to apply only to Class B vehicles.

Revisions made to the Class B vehicle procedures in this edition of J1516 include improved procedures for determining the Accelerator Heel Point (AHP) and shoe plane angle, and utilization of the new definitions and procedures in SAE J1100.

SAE J1516 has been reaffirmed to comply with the SAE Five-Year Review policy.

## 1. SCOPE

This Recommended Practice provides procedures for defining the Accelerator Heel Point and the Accommodation Tool Reference Point, a point on the seat H-point travel path which is used for locating various driver workspace accommodation tools in Class B vehicles (heavy trucks and buses). Three accommodation tool reference points are available depending on the percentages of males and females in the expected driver population (50:50, 75:25, and 90:10 to 95:5).

These procedures are applicable to both the SAE J826 HPM and the SAE J4002 HPM-II.

## 2. REFERENCES

### 2.1 Applicable Documents

The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

#### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J1100 Motor Vehicle Dimensions

SAE J1517 Driver Selected Seat Position

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2024 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or used for text and data mining, AI training, or similar technologies, without the prior written permission of SAE.

**TO PLACE A DOCUMENT ORDER:**  
Tel: 877-606-7323 (inside USA and Canada)  
Tel: +1 724-776-4970 (outside USA)  
Fax: 724-776-0790  
Email: [CustomerService@sae.org](mailto:CustomerService@sae.org)  
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE J1516\_202412

For more information on this standard, visit [https://www.sae.org/standards/content/J1516\\_202412/](https://www.sae.org/standards/content/J1516_202412/)

Documents

Standard, visit Sharing Hub

## 2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

### 2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

|           |                                                                                                          |
|-----------|----------------------------------------------------------------------------------------------------------|
| SAE J941  | Motor Vehicle Drivers' Eye Locations                                                                     |
| SAE J1052 | Motor Vehicle Driver and Passenger Head Position                                                         |
| SAE J1521 | Truck Driver Shin-Knee Position for Clutch and Accelerator                                               |
| SAE J1522 | Truck Driver Stomach Position                                                                            |
| SAE J826  | Devices for Use in Defining and Measuring Vehicle Seating Accommodation                                  |
| SAE J4002 | H-Point Machine (HPM-II) Specifications and Procedure for H-Point Determination – Auditing Vehicle Seats |
| SAE J4003 | H-Point Machine (HPM-II) - Procedure for H-Point Determination – Benchmarking Vehicle Seats              |
| SAE J4004 | Positioning the H-Point Design Tool – Seating Reference Point and Seat Track Length                      |

N. L. Philippart, R. W. Roe, A. J. Arnold, T. J. Kuechenmeister (1984), "Driver Selected Seat Position Model," SAE Paper No. 840508, Detroit, MI.

M. S. Sanders (1983), "U.S. Truck Driver Anthropometric and Truck Workspace Study," Final Report Submitted to: SAE International, Warrendale, PA.

B. E. Shaw and M. S. Sanders (1984), "Female U. S. Truck Driver Anthropometric and Truck Workspace Study," Final Report Submitted to: SAE International, Warrendale, PA.

## 3. DEFINITIONS

The following definitions are given in SAE J1100.

- a. H-point
- b. Seat height (H30)
- c. Steering wheel diameter (W9)
- d. Accelerator heel point (AHP)
- e. Seating reference point (SgRP)
- f. Shoe plane
- g. Shoe Plane Angle (A27)
- h. Ball of Foot Reference Point (BOFRP)

### 3.1 CLASS B VEHICLES

Vehicles whose seat SgRP height (H30) is between 405 and 530 mm, and steering wheel diameter (W9) is between 450 and 560 mm (Figure 1).

NOTE: Class B vehicles include heavy trucks, some medium duty trucks, and some buses. In most cases these vehicles have flat treadle accelerator pedals and horizontal fore/aft seat travel paths.

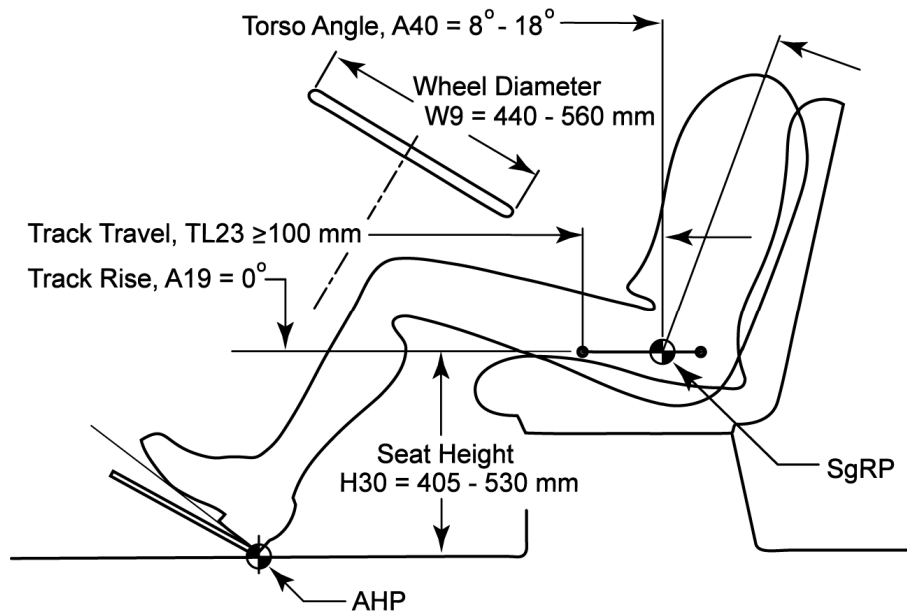


FIGURE 1: DEFINING PARAMETERS FOR CLASS B VEHICLES

### 3.2 ACCOMMODATION TOOL REFERENCE LINE

Two-dimensional side-view line, defined as a function of H30 for three selected male/female driver population mixes, used to specify a reference point relative to the AHP in the vehicle interior for the purpose of locating driver workspace accommodation tools (Figure 2).

### 3.3 ACCOMMODATION TOOL REFERENCE POINT (ATRP)

Point at the intersection of the accommodation tool reference line for the given driver population mix and the design H-point travel path (Figure 2).