Operator's Seat Dimensions for Off-Road Self-Propelled Work Machines —SAE J899 OCT80

SAE Recommended Practice
Completely Revised October 1980

THIS IS A PREPRINT WHICH IS SUBJECT TO REVISIONS AND CORRECTIONS. THE FINAL VERSION WILL APPEAR IN THE 1982 EDITION OF THE SAE HANDBOOK.

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LAND SEA AIR SPACE

PREPRINT

OPERATOR'S SEAT DIMENSIONS FOR OFF-ROAD ϕSELF-PROPELLED WORK MACHINES—SAE J899 OCT80

SAE Recommended Practice

Report of the Construction and Industrial Machinery Technical Committee, approved August 1964, completely revised by the Agricultural Tractor Technical Committee October 1980. Rationale statement available.

[This SAE Recommended Practice is intended as a guide toward standard practice, but may be subject to frequent change to keep pace with experience and machine design advances. This should be kept in mind when considering its use.]

1. Purpose—This SAE Recommended Practice provides seat dimensions and adjustments for the design of operator's seat.

2. Scope—For off-road work machines including construction, agricultural, and forestry as listed in SAE J1057a, J1150, and J1209.

3. Discussion

3.1 All seat dimensions and adjustments (if provided), are referenced to the H-Point/SIP as determined by SAE J1163.

3.2 Nominal values[1] are included wherever possible and their use will generally provide maximum ergonomic benefit.

3.3 The nominal values are based on the body dimensions of SAE J833a and will accomodate operator sizes from the 5th percentile female through the 95th percentile male of that document. Dimensions or adjustments (or use of), other than those in this recommended practice may be used if they will provide equivalent or greater machine benefit. Consideration may be given for specific controls or operator requirements (that is, smaller worldwide population body dimensions, etc.).

3.4 On work machines where a higher H-Point/SIP is desirable, a reduced back and seat cushion angle should be considered.

3.5 Armrests can be rotated up or down or translated down to provide ingress or egress.

3.6 Operator seats can be provided with a swivel or tilt pivot to improve both operator work position and ingress or egress. A means of securing the work positions of the seat must be provided to prevent unwanted seat movement during operation.

3.7 To aid the designer, the vertical distance from the H-Point/SIP to the Heel Rest Surface is included as a guide.

3.8 On the initial design of the seat or operator area, good use can be made of the two-dimensional manikin of SAE J826b for approximate H-Point/SIP location.

4. References

1. SAE J826b—Devices for Use in Defining and Measuring Vehicle Seating Accommodation.
2. SAE J833a—USA Male and Female Physical Dimensions for Construction and Industrial Equipment Design.
3. SAE J1057a—Identification Terminology of Earthmoving Machines.
4. SAE J1116—Categories of Off-Road Self-Propelled Work Machines.
5. SAE J1150—Terminology for Agricultural Equipment.
6. SAE J1163—Method for Determining Operator Seat Location on Agricultural and Construction Machines.
7. SAE J1209—Identification Terminology of Mobile Forestry Machines.
8. Humanscale—Henry Dreyfuss Assoc.
9. The Human Body in Equipment Design—Damon, Stoudt, McFarland.
10. ISO/DIS 5007—Agricultural Wheeled Tractor Seat.
11. ISO 4253—Agricultural Tractors—Operator's Seating Dimensions.
12. ISO 5353—Earthmoving Machinery—Seat Index Point.

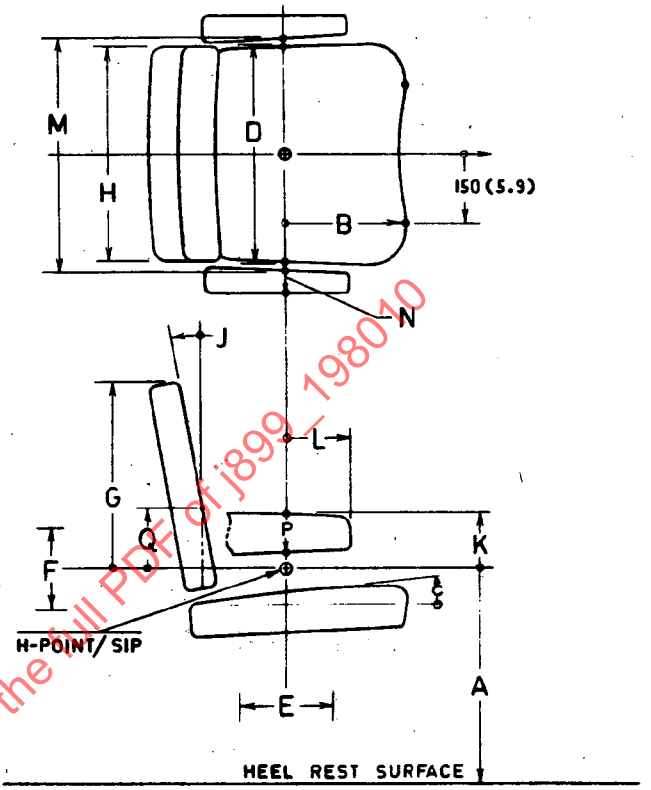

FIG. 1—SEAT DIMENSIONS AND ADJUSTMENTS

[1] A value which might have the broadest general acceptance.

The ϕ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.