

(R) Human Physical Dimensions

This recommended practice is technically equivalent to the human physical dimensions of operators in ISO-3411-1982.

Foreword—This document has been superceded with SAE J/ISO 3411.

1. Scope—This SAE Recommended Practice defines the worldwide human physical dimensions to be used in construction, general purpose industrial, agricultural tractors, forestry, and specialized mining machinery categories as defined in SAE J1116 JUN86.

2. References

2.1 Applicable Publications—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, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAEJ898OCT87—Control Locations for Off-Road Work Machines

SAEJ925DEC87—Minimum Service Access Dimensions for Off-Road Machines

SAEJ1116 JUN86—Categories of Off-Road, Self-Propelled Work Machines

3. Physical Dimensions

3.1 General—The physical and body pivot dimensions of small, medium, and large humans are given in Figures 1 and 2 for the sitting and standing positions.

3.2 Definitions

3.2.1 SMALL HUMAN—Represents the 5th percentile female. Only 5% of the female population is smaller than the dimensions given.

3.2.2 MEDIUM HUMAN—Represents the half-way position between the small and large humans.

3.2.3 LARGE HUMAN—Represents the 95th percentile male. Only 5% of the male population is larger than the dimensions given.

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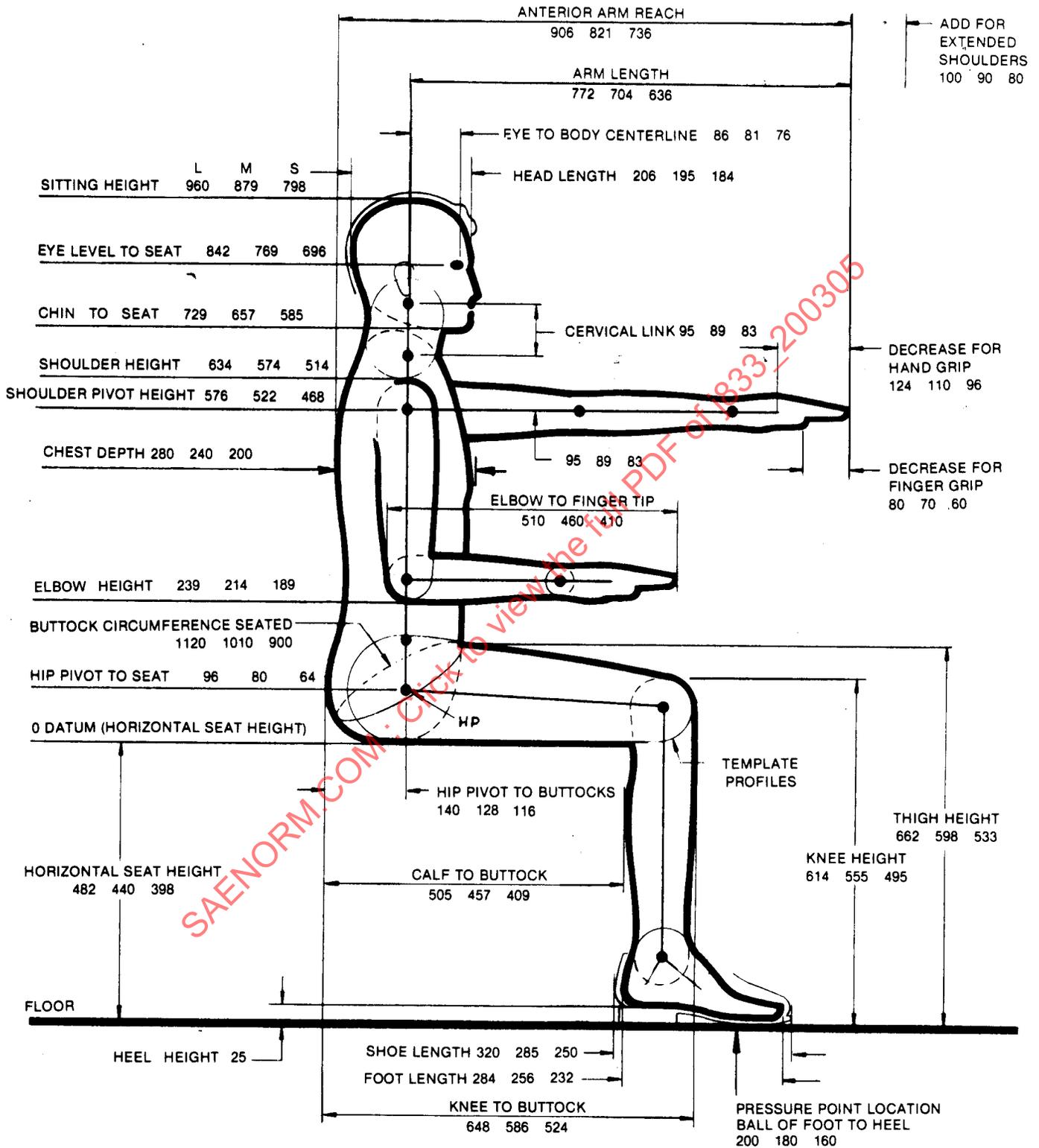


FIGURE 1—SITTING POSITION

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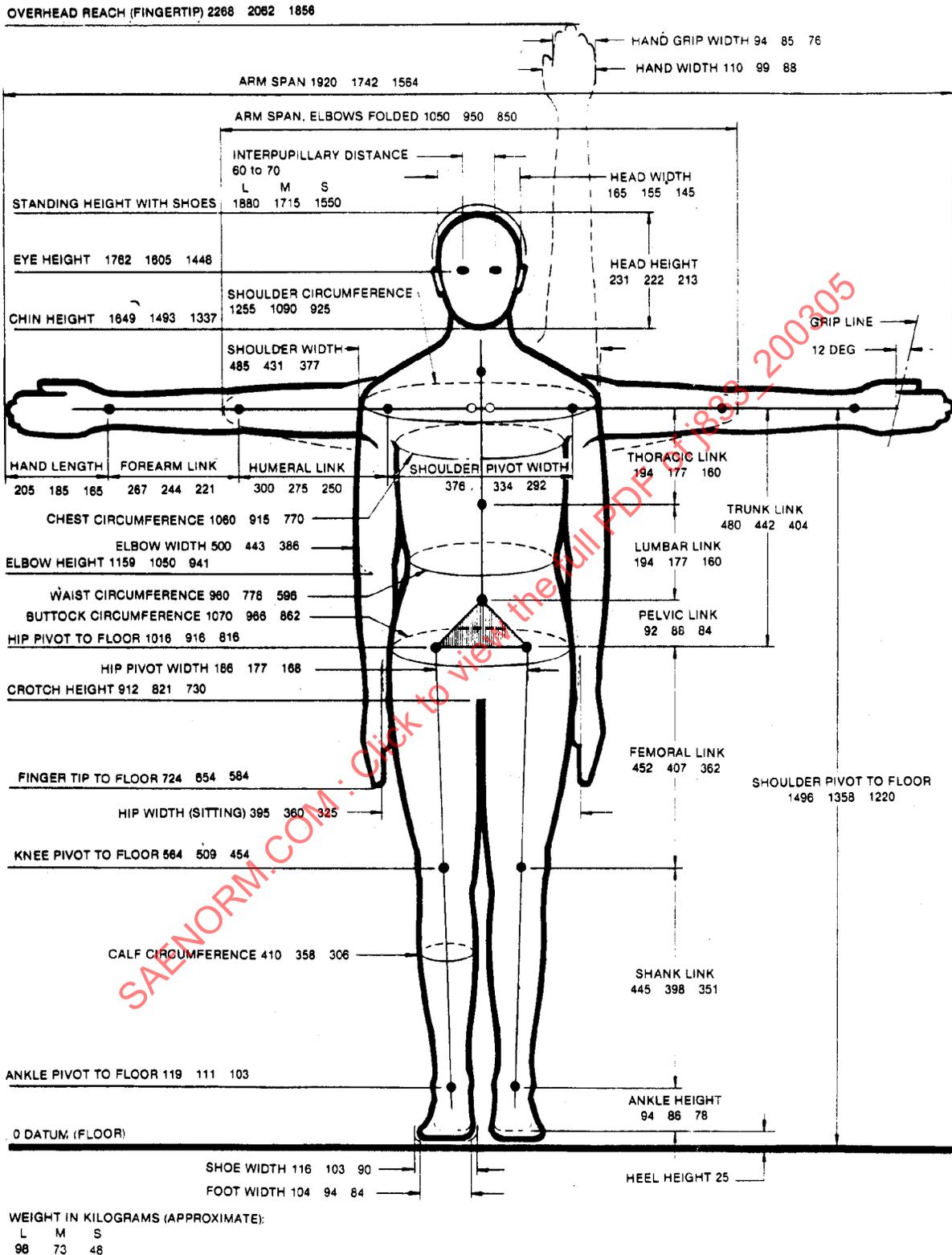


FIGURE 2—STANDING POSITION

TABLE 1—HEAVY CLOTHING ADDITIVE

	<u>mm</u>
Sitting Height	50
Head Width	100
Shoulder Height	50
Shoulder Width	75
Chest Depth	75
Abdominal Depth	90
Thigh Thickness	50
Hand Width	25
Hand Thickness	25
Hand Length	25
Shoe Width	50
Shoe Length	50
	<u>kg</u>
Weight	14
(For appropriate access openings, see SAE J925)	

3.3 Dimensions—The dimensions in Figures 1 and 2 include an allowance for shoe height and light clothing. Table 1 includes an additive for heavy winter clothes.

3.4 Range of Movement Angles—The range movement of body pivot is defined in SAE J898 OCT87.

3.5 Dimension Variations

3.5.1 HUMAN BODY NATURAL SLUMP

3.5.1.1 Sitting height can decrease 90 mm for a large human and 50 mm for a small human.

3.5.1.2 Standing height can decrease 30 mm for any size human.

3.5.2 ETHNIC GROUP VARIATION

3.5.2.1 Afro descents can have 2% longer arms and 4% longer legs than dimensions provided.

3.5.2.2 Oriental descents can have 7% shorter arms and 10% shorter legs than dimensions provided.

PREPARED BY THE SAE HUMAN FACTORS MACHINE CONTROLS COMMITTEE