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Agricultural tractors — Operator's seating accommodation — Dimensions

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*Tracteurs agricoles — Poste de conduite pour conducteur assis —
Dimensions*

ISO 4253:1993

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Reference number
ISO 4253:1993(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 4253 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Sub-Committee SC 3, *Safety and comfort of the operator*.

This second edition cancels and replaces the first edition (ISO 4253:1977), of which it constitutes a full revision and extension.

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International Organization for Standardization
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Agricultural tractors — Operator's seating accommodation — Dimensions

1 Scope

This International Standard lays down dimensions for the operator's seat and the location of specific controls relative to the Seat Index Point (SIP) within the seating accommodation on agricultural tractors with a track width greater than 1 150 mm. The controls included are the steering-wheel, clutch pedal, brake pedal(s), and throttle pedal.

Standardized dimensions and locations will assist the future design of operator's seating accommodation on agricultural tractors.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5353:1978, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 length of seat in front of SIP: Horizontal distance parallel to the longitudinal plane of the vehicle, measured from the front edge of the seat cushion (offset 150 mm on either side of the longitudinal

centreline) to the vertical transverse plane containing the seat index point.

3.2 width of seat cushion: Width measured along the transverse plane through the seat index point.

3.3 pedal(s): Any or all of the clutch, brake and throttle pedals.

4 Adjustment of pedals and steering-wheel

The pedals shall be adjusted in accordance with the manufacturer's instructions. Measurements of the pedal position shall be made before any force is applied to move the pedals.

The measurement point of a pedal is where the longitudinal and transverse centrelines of the pedal tread surface intersect.

The measurement point for the steering-wheel is the point where the centreline through the steering-wheel axis intersects with the upper plane of the steering-wheel rim.

5 Lateral arrangement of pedals

The pedals shall be placed in the following order from the left-hand side to the right-hand side: clutch (operated by the left foot), brake(s) (operated by the right foot) and, if installed, the foot throttle (operated by the right foot).

NOTE 1 This arrangement is in accordance with the recommendations in ISO 3789-1:1982, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Location and method of operation of operator controls — Part 1: Common controls* and ISO 3789-2:1982, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Location and method of operation of operator controls — Part 2: Controls for agricultural tractors and machinery*.

6 Dimensions

The dimensions and angles for the operator's seating accommodation shall be as shown in figures 1 to 4.

Before measurements are made, the SIP shall be determined, with the seat at the mid-point of the seat's longitudinal, vertical and angular adjustment.

6.1 Seat dimensions

Seat dimensions shall be in accordance with figures 1 and 2 (see note 2). The rearward inclination of the loaded seat cushion surface shall be 3° to 12° to the horizontal, measured with the loading device specified in ISO 5353 in position. Choice of angle of inclination within this range will depend on the seating position.

The minimum and preferred ranges of longitudinal and vertical adjustment of the seat from its mid-position are given in table 1. The longitudinal and vertical adjustments shall be independent of each other. It shall be possible to make such adjustments without the use of tools.

Table 1 — Seat adjustment

Adjustment	Range	
	Minimum	Optimum
	mm	mm
Longitudinal adjustment forward and rearward from the mid-position.	± 75	± 100
Vertical adjustment upwards and downwards from the mid-position.	± 30	± 50

NOTE 2 The drawing of the seat in figures 1 and 2 is diagrammatic only and is not intended to indicate any design features.

6.2 Pedal location

The position of the clutch and brake pedals from the SIP is mainly dependent on the angle between the operator's upper and lower leg. The dimensions l_1 and h_1 (see figure 1) and their interrelationship is given in

figure 3. The distance of the foot throttle forward from the transverse axis through the SIP shall not be greater than 90 % of l_1 .

6.3 Steering-wheel location

The position of the steering-wheel relative to SIP is mainly dependent on the angle of the upper arms to the torso and the angle between the upper and lower arm. The dimensions l_2 and h_2 (see figure 1) and their interrelationship are given in figure 4.

The longitudinal axis through the centre of the steering-wheel may be offset a maximum of ± 50 mm from the longitudinal axis through the SIP.

6.4 Steering-wheel angle

The choice of steering-wheel angle (see figure 1, α) is affected by the seating position, steering-wheel diameter and the force required to turn the steering-wheel. This steering-wheel angle, α , shall be in the range 0 to 40°.

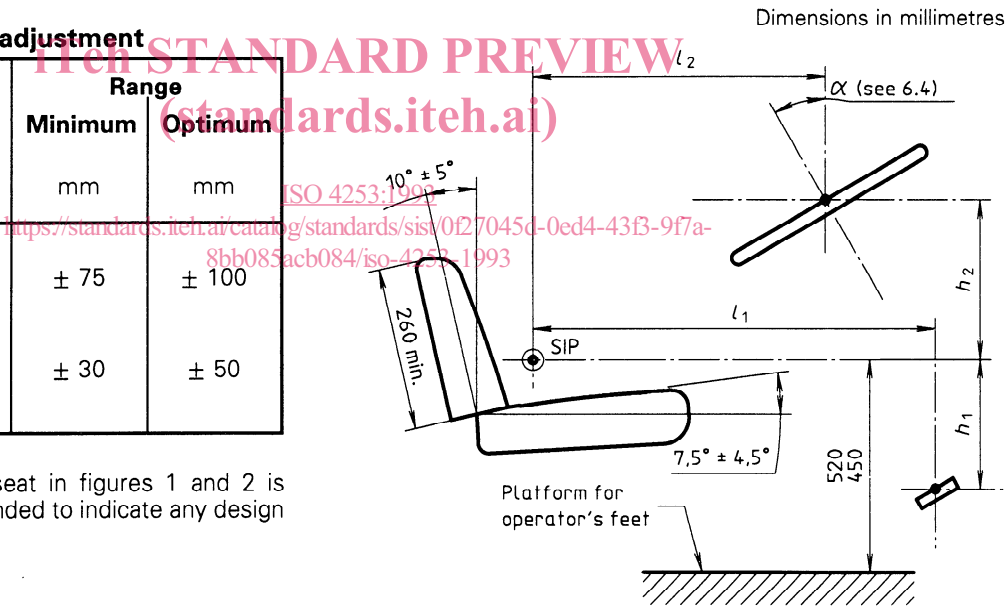


Figure 1 — Operator's seating accommodation, side view

Dimensions in millimetres

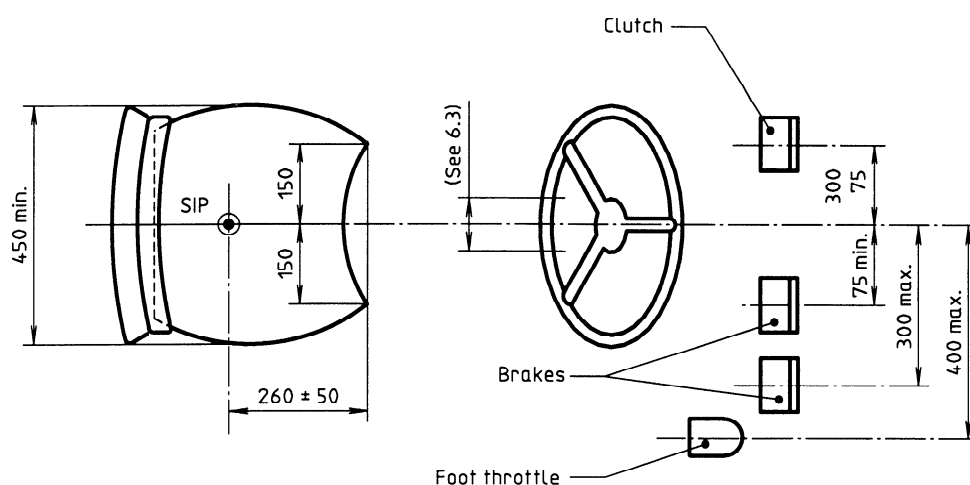


Figure 2 — Operator's seating accommodation, plan view

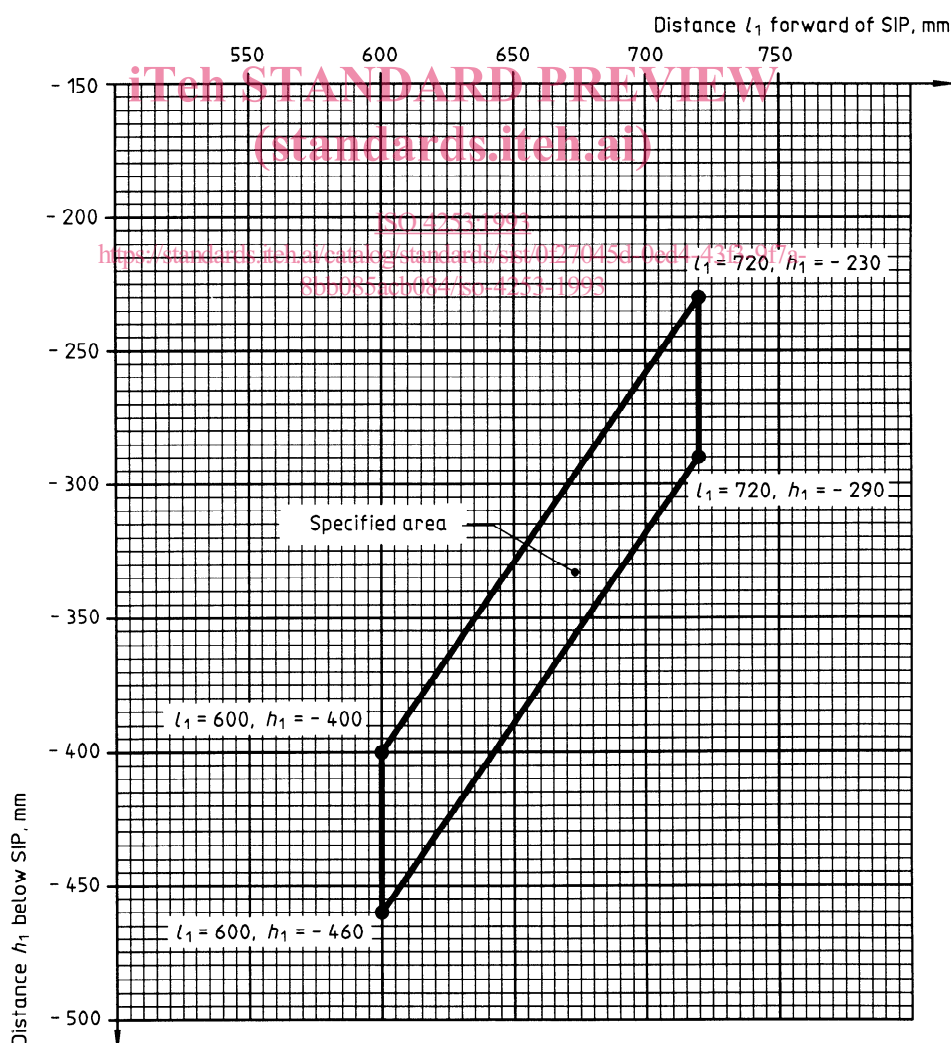


Figure 3 — Pedal position relative to SIP

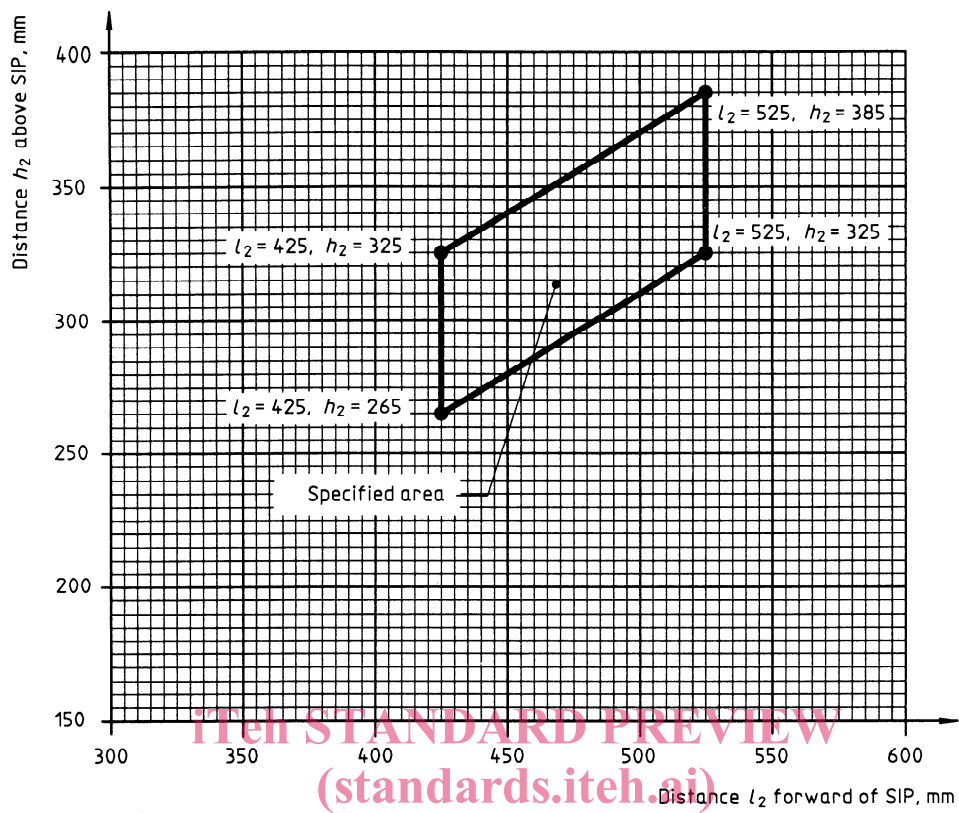


Figure 4 — Steering-wheel position relative to SIP

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