INTERNATIONAL STANDARD ISO 3164

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Earth-moving machinery — Laboratory evaluations of roll-over and falling-object protective structures — Specification for the deflection-limiting volume

Engins de terrassement — Études en laboratoire des structures de protection au retournement et contre les chutes d'objets — Spécifications pour le volume limite de déformation

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Earth-moving machinery — Laboratory evaluations of roll-over and falling-object protective structures — Specification for the deflection-limiting volume

1 SCOPE

This International Standard gives specifications for the deflection — limiting volume to be used in laboratory evaluations of roll-over and falling-object protective structures. It relates to ISO 3471, dealing with roll-over protective structures, and to ISO 3449, dealing with falling-object protective structures. The dimensioning of the deflection-limiting volume takes into account the large operator (see ISO 3411).

2 FIELD OF APPLICATION

This International Standard shall be used when performing laboratory evaluations of roll-over protective structures set forth in ISO 3471 and falling-object protective structures set forth in ISO 3449.

3 REFERENCES

ISO 3411, *Earth-moving machinery — Human physical dimensions of operators and minimum operator space envelope.* [1)]

ISO 3449, *Earth-moving machinery — Falling-object protective structures — Laboratory tests and performance requirements.* [1)]

ISO 3471, *Earth-moving machinery — Roll-over protective structures — Laboratory tests and performance requirements.* [1)]

4 DEFINITIONS AND ABBREVIATIONS

For the purpose of this International Standard the following definitions shall apply :

4.1 roll-over protective structure (ROPS) : A system of structural members, arranged on a vehicle in such a way as to reduce the probability of the vehicle crushing its operator in the event of its accidentally overturning.

4.2 falling-object protective structure (FOPS) : A system of structural members arranged on a machine in such a way as to provide operators with reasonable protection from falling objects (for example trees, rocks).

4.3 deflection-limiting volume (DLV) : A volume that serves to set limits and deflections permissible when performing laboratory evaluations of ROPS and FOPS. The volume is based on the seat dimensions for 95 % of the operators, i.e. height 1,92 m (75.5 in) and mass 98 kg (215 lb).

4.4 locating point (LP) (see figure 2) : A point in the middle vertical plane that is parallel to the longitudinal axis of the seat and at the intersection of the following two lines in this plane :

— HH : The horizontal line that is tangential to the highest point of the seat cushion in this plane;

— VV : The vertical line that is tangential to the most forward point of the seat back in this plane.

This point is defined to establish a practical definitive location for the DLV (4.3) regardless of style, softness or mass of operator.

4.5 locating axis (LA) (see figure 1) : That line which is perpendicular to the middle vertical longitudinal plane of the seat and intersects that plane at the locating point (LP) defined in 4.4.

5 APPARATUS

A volume as shown in figure 1. Accuracy of the length : ± 13 mm (0.5 in).

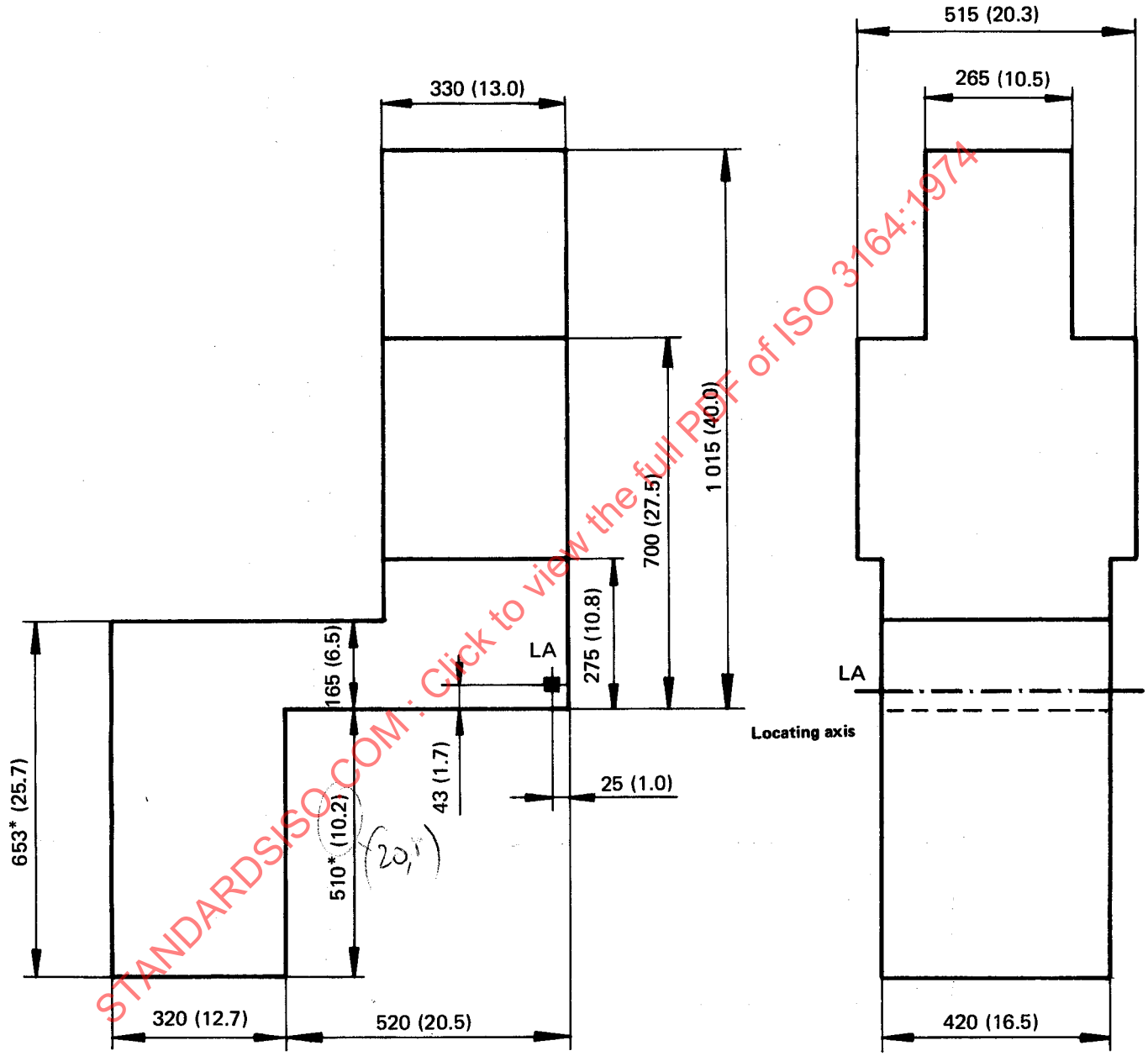
6 POSITIONING OF DEFLECTION-LIMITING VOLUME (DLV)

6.1 The seat shall be adjusted to the rearmost position first and then to the lowest position.

The position of seats with suspension systems shall include that static deflection of the suspension system which a seated operator as defined in 4.3 would impose on the suspension system (all mechanical, hydraulic, or gas elements to be at the manufacturer's recommended settings for this size of operator).

1) At present at the stage of draft.

Dimensions in millimetres
(Inch values in parentheses)



* But not below the floor plates.

FIGURE 1 — **Deflection-limiting volume (DLV)**