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Earth-moving machinery — Lift-arm support devices

Engins de terrassement — Dispositifs de support du bras de levage

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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 10533 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Sub-Committee SC 2, *Safety requirements and human factors*.

International Organization for Standardization
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Earth-moving machinery — Lift-arm support devices

1 Scope

This International Standard specifies the performance requirements and test method for mechanical lift-arm support devices for loaders, backhoe loaders and skid-steer loaders equipped with a lift-arm, where the lift-arm is required to be held in the elevated position for maintenance, servicing or other non-operational purposes.

It also specifies installation, instructions, storage and colour requirements for lift-arm support devices.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6016:1982, *Earth-moving machinery — Methods of measuring the masses of whole machines, their equipment and components.*

ISO 6746-1:1987, *Earth-moving machinery — Definitions of dimensions and symbols — Part 1: Base machine.*

ISO 6746-2:1987, *Earth-moving machinery — Definitions of dimensions and symbols — Part 2: Equipment.*

3 Definitions

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

3.1 lift-arm: Main component or item of equipment of an earth-moving machine to lift, load, transport and lower earth or other materials.

3.2 mechanical lift-arm support device(s): One or more links, bars or structures, including attachment points and parts, designed to support the lift-arm.

3.3 working circuit pressure: That nominal pressure applied to the specific circuit by the pump(s).

4 Performance requirements

The mechanical lift-arm support device shall be designed to withstand the static load imposed by the lowering force of the working circuit pressure plus 1,5 times the mass of the empty attachments, arms and linkage.

If the lift-arm support device is loaded by lifting action, then it shall also withstand the lifting force.

The lowering or lifting forces, excluding the mass of empty attachments, arms and linkage shall be determined by consulting the manufacturer's maximum recommended specifications measured in accordance with ISO 6016, ISO 6746-1 and ISO 6746-2.

5 Other requirements

5.1 Installation

The support device shall be installed within the machine structure so that neither movement of the machine nor upward and downward movement of the lift-arm linkage will dislodge or disengage the support device.

It is recommended that the elevated lift-arm position be selected to provide good access for maintenance and servicing operation.

5.2 Installation instructions

Installation instructions shall be provided by a permanent means in a location adjacent to the point of use.

The instructions should clearly state that maintenance and servicing operations should be made with an empty bucket or empty attachment.

5.3 Storage

The support device and its required parts shall be stored permanently on the machine in a secure manner.

5.4 Colour

The support device, excluding the attaching parts, shall be red on all machines except where the machine colour is red, in which case the support device shall be yellow.

6 Test method

A physical test is required to verify the design criteria of clause 4 for each different design of lift-arm support device. The support device shall withstand the test and not exhibit any permanent structural deformation or failure.