INTERNATIONAL STANDARD

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Cranes — Safety requirements for loader cranes

Appareils de levage à charge suspendue — Exigences de sécurité pour les grues de chargement

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Contents

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15442 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 6, *Mobile cranes*.

Introduction

This International Standard has been considered necessary because of the lack, so far, of specific requirements accepted worldwide for loader cranes.

Even though a loader crane, when mounted on a vehicle, may be considered as a particular type of mobile crane, current ISO Standards developed for mobile cranes do not include, with very few exceptions, specific requirements for loader cranes.

Therefore this International Standard has been designed to:

a) identify specific safety requirements for loader cranes;

b) when applicable, refer to existing International Standards which contain provisions that can be applied to loader cranes;

c) promote loader crane safety by both identifying specific requirements and referring to existing applicable standards, so that incorporating all such provisions into the design and use of loader cranes will guard against and minimize injury to workers and damage to equipment;

d) facilitate the work of everyone in the field of loader cranes (designers, supervisors and other personnel as well as people directly or indirectly responsible for their safe use and maintenance) who need to consult the current International Standard for loader cranes;

e) contribute to further international harmonization of loader crane standards.

Cranes — Safety requirements for loader cranes

1 Scope

This International Standard specifies minimum requirements for design, calculation, examinations and tests of hydraulic powered loader cranes and their mountings on to vehicles or static foundations.

This International Standard applies to all new loader cranes manufactured one year after its publication. It is not the intent of this International Standard to require the retrofitting of existing loader cranes.

This International Standard does not apply to loader cranes used on board ships or floating structures and to articulated boom system cranes which are designed as total integral parts of special equipment such as forwarders.

The hazards covered by this International Standard are identified in Clause 4.

This International Standard does not cover hazards related to the lifting of persons.

NOTE 1 Hoists will be covered by a special standard.

NOTE 2 The use of cranes for the lifting of persons may be subject to specific national regulations.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4306-1, *Cranes — Vocabulary — Part 1: General*

ISO 4310, *Cranes — Test code and procedures*

ISO 4413, *Hydraulic fluid power — General rules relating to systems*

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

ISO 7000:2004, *Graphical symbols for use on equipment — Index and synopsis*

ISO 7296-2:1996, *Cranes — Graphical symbols — Part 2: Mobile cranes*

ISO 7752-1, *Lifting appliances — Controls — Layout and characteristics — Part 1: General principles*

ISO 8566-1, *Cranes — Cabins — Part 1: General*

ISO 8566-2, *Cranes — Cabins — Part 2: Mobile cranes*

ISO 8686-1, *Cranes — Design principles for loads and load combinations — Part 1: General*

ISO 9927-1, *Cranes — Inspections — Part 1: General*

ISO 9928-1, *Cranes — Crane driving manual — Part 1: General*

ISO 9942-1, *Cranes — Information labels — Part 1: General*

ISO 10245-1, *Cranes — Limiting and indicating devices — Part 1: General*

ISO 11660-1, *Cranes — Access, guards and restraints — Part 1: General*

ISO 11660-2, *Cranes — Access, guards and restraints — Part 2: Mobile cranes*

ISO 12100-1, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*

ISO 12478-1, *Cranes — Maintenance manual — Part 1: General*

ISO 13849-1:—[1)], *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13852, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

ISO 13853, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs*

ISO 13854, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

ISO 15513, *Cranes — Competency requirements for crane drivers (operators), slingers, signallers and assessors*

IEC 60068-2-64:1993, *Environmental testing — Part 2: Test methods — Test Fh: Vibration, broad-band random (digital control) and guidance*

IEC 60204-32:1998, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments*

IEC 61000-6-4, *Electromagnetic compatibility (EMC) — Part 6: Generic standards — Section 4: Emission standard for industrial environments*

3 Terms and definitions

3.1 Definitions

For the purposes of this document, the terms and definitions given in ISO 4306-1 and the following apply.

NOTE For convenience of reference the definitions are, with the exception of 3.1.1 Loader crane, grouped in alphabetical order in the English language version.

1) To be published. (Revision of ISO 13849-1:1999)