INTERNATIONAL STANDARD

ISO 22915-20

First edition
2008-06-15

Industrial trucks — Verification of stability —

Part 20: Additional stability test for trucks operating in the special condition of offset load, offset by utilization

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Chariots de manutention — Vérification de la stabilité — Partie 20: Essai de stabilité supplémentaire pour les chariots travaillant dans des conditions de gerbage spéciales avec une charge déportée, déport par utilisation

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Reference number
ISO 22915-20:2008(E)

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Published in Switzerland

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Foreword

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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 22915-20 was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 2, *Safety of powered industrial trucks*.

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ISO 22915 consists of the following parts, under the general title *Industrial trucks — Verification of stability*:

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— *Part 1: General*

— *Part 2: Counterbalanced trucks with mast*

— *Part 3: Reach and straddle trucks*

— *Part 4: Pallet stackers, double stackers and order-picking trucks up to and including 1 200 mm lift height*

— *Part 7: Bidirectional and multidirectional trucks*

— *Part 8: Additional stability test for trucks operating in the special condition of stacking with mast tilted forward and load elevated*

— *Part 10: Additional stability test for trucks operating in the special condition of stacking with load laterally displaced by powered devices*

— *Part 20: Additional stability test for trucks operating in the special condition of offset load, offset by utilization*

— *Part 21: Order-picking trucks with operator position elevating above 1 200 mm*

The following parts are under preparation:

— *Part 5: Single side loading trucks*

— *Part 9: Counterbalanced trucks with mast handling freight containers of 6 m (20 ft) length and longer*

— *Part 11: Variable reach trucks*

— *Part 12: Variable reach trucks handling freight containers of 6 m (20 ft) length and longer*

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— *Part 14: Rough-terrain variable reach trucks*

— *Part 15: Counterbalanced trucks with articulated steering*

— *Part 16: Pedestrian-propelled trucks*

— *Part 17: Burden and personnel carriers*

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Introduction

An important step forward in work on the ISO 22915 series was the agreement to put in place a new structure. The stability tests are presented in the form of a basic part describing and defining stability tests in general, together with separate parts that each give specific stability test criteria and requirements for a different truck type.

From the very beginning, the task of the Working Group involved was to establish the new structure and revise existing standards to create a series of International Standards complying with the major legislative regulations in the world such as those in force in the EU, USA, Japan and Australia.

For several problem areas compromises were needed and will be needed in the future. In order to ensure that these International Standards are actively used in the ISO member countries worldwide, it will be necessary that they replace existing national standards.

Only in this way will there will be the guarantee that products in accordance with these International Standards can be shipped worldwide, freely and without any technical barriers to trade.

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Industrial trucks — Verification of stability —

Part 20: Additional stability test for trucks operating in the special condition of offset load, offset by utilization

1 Scope

ISO 22915 deals with the safety of industrial trucks, as defined in ISO 5053, relative to their stability and the verification of that stability. For the purposes of ISO 22915, industrial trucks are wheeled, self-propelled or pedestrian-propelled vehicles, excepting those running on rails. They are either operator-controlled or driverless and designed to carry, tow, push, lift, stack or tier in racks.

This part of ISO 22915 specifies an additional test for verifying the stability of a laden truck whose utilization creates the special operating condition whereby the load centre of gravity is substantially offset from the truck's longitudinal centre plane. It is applicable to the following types of truck:

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a) counterbalanced trucks, as specified in ISO 22915-2;

b) reach (retractable mast or forks) and straddle trucks, as specified in ISO 22915-3;

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c) pallet stackers, as specified in ISO 22915-4;

d) bidirectional and multidirectional (retractable mast or forks) trucks, as specified in ISO 22195-7;

e) rough-terrain variable reach trucks [1];

f) counterbalanced trucks fitted with articulated steering [1];

g) variable reach trucks [1];

h) rough-terrain trucks with mast.

A load is considered to be substantially offset if displaced by more than

— 100 mm, for a truck with a rated capacity $< 5\,000$ kg,

— 150 mm, for a truck with a rated capacity $\geqslant 5\,000$ kg and $\leqslant 10\,000$ kg,

— 250 mm, for a truck with a rated capacity $> 10\,000$ kg and $< 20\,000$ kg,

— 350 mm, for a truck with a rated capacity $\geqslant 20\,000$ kg.

1) Intended to be covered by a future part of ISO 22915. See Foreword.

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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 3691-1, *Industrial trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless, variable-reach trucks and burden-carrier trucks* [2)]

ISO 5053, *Powered industrial trucks — Terminology*

ISO 22915-1, *Industrial trucks — Verification of stability — Part 1: General* [2)]

ISO 22915-2, *Industrial trucks — Verification of stability — Part 2: Counterbalanced trucks with mast*

ISO 22915-3, *Industrial trucks — Verification of stability — Part 3: Reach and straddle trucks*

ISO 22915-4, *Industrial trucks — Verification of stability — Part 4: Pallet stackers, double stackers and order-picking trucks up to and including 1 200 mm lift height* [2)]

ISO 22915-7, *Industrial trucks — Verification of stability — Part 7: Bidirectional and multidirectional trucks* [2)]

3 Terms and definitions

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For the purposes of this document, the terms and definitions given in ISO 22915-1 and the following apply.

3.1
special operating condition
stacking with load offset, offset by utilization

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NOTE See Figure 1 for an example.

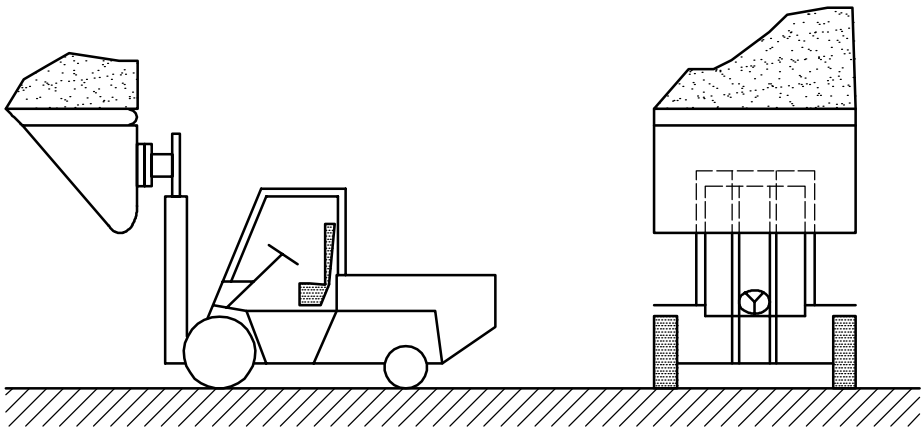

Figure 1 — Example of load offset by utilization

2) To be published.

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4 Test conditions

4.1 General

See ISO 22915-1.

4.2 Position of truck on the tilt table[3)]

4.2.1 Counterbalanced trucks

The position of the truck on the tilt table shall be in accordance with test 3 of ISO 22915-2.

4.2.2 Reach and straddle trucks

The position of the truck on the tilt table shall be in accordance with test 3 of ISO 22915-3.

4.2.3 Pallet stackers

The position of the truck on the tilt table shall be in accordance with test 3 of ISO 22915-4.

4.2.4 Bidirectional and multidirectional trucks

The position of the truck on the tilt table shall be in accordance with test 3 of ISO 22915-7.

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4.3 Position of the load

The centre of gravity of the load shall be offset laterally by the maximum amount it is anticipated will be encountered in actual operation.

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The test shall be conducted on the side on which the truck is least stable. The mast shall be retracted and tilted fully rearward where the design permits. The load shall be raised to the maximum elevation.

If the manufacturer shows other possible ratings on the capacity plate (see Clause 6), tests shall be carried out with maximum load at the corresponding height as well as with the load corresponding to the maximum height as agreed between the interested parties.

4.4 Tests for trucks with attachments

Trucks with attachments shall be subjected to the foregoing stability tests, as appropriate.

The test loads and their positioning shall be those specified on the capacity plate(s) of the truck equipped with the attachment when used under the special operating condition and in accordance with the manufacturer's instructions.

The lift heights required in the tests shall be measured between the surface of the tilt table and the underside of the load in its approved handling position or the underside of the load handling means, whichever is the smaller.

3) For other applicable truck types (see Scope), the position of the truck or the tilt table will be as given in the equivalent test of the respective part of ISO 22915.

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