
**Industrial trucks — Lorry-mounted
trucks —**

**Part 2:
Safe use requirements**

*Chariots de manutention — Chariots embarqués sur porteur
routier —*

Partie 2: Exigences pour l'utilisation en toute sécurité

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 4, *Rough-terrain trucks*.

A list of all parts in the ISO 20297 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Lorry-mounted trucks are known by a variety of terms, including for example "vehicle-mounted trucks", "piggyback trucks".

Lorry-mounted trucks can also be equipped with a variety of attachments.

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Industrial trucks — Lorry-mounted trucks —

Part 2: Safe use requirements

1 Scope

This document specifies requirements for the application, inspection, training, maintenance, repair and safe operation (hereafter referred to collectively as the 'safe use') of industrial and rough-terrain lorry-mounted trucks (hereafter referred to as 'trucks') which have design features that allow them to be mounted for transport on a carrier vehicle.

This document is intended to achieve the following:

- the prevention of personal injuries, property damage and accidents;
- the establishment of criteria for inspection, maintenance and operation;
- the establishment of operator training requirements.

NOTE National or local requirements can apply.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 5057, *Industrial trucks — Inspection and repair of fork arms in service on fork-lift trucks*

ISO 20297-1:2017, *Industrial trucks — Lorry-mounted trucks — Part 1: Safety requirements and verification*

ISO 23676, *Rough-terrain trucks — Operator training — Content and methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

authorized person

person approved or assigned to perform a specific task or tasks at a specific location or locations at a worksite

[SOURCE: ISO 11525-1:2020, 3.1]

3.2

user

person or entity responsible for assigning an *operator* (3.3) to operate a truck and specifying the tasks to be performed

[SOURCE: ISO 11525-1:2020, 3.2]

3.3

operator

person who controls the *operation* (3.8) of the truck

[SOURCE: ISO 11525-1:2020, 3.3]

3.4

competent person

person who has acquired, through training, qualification, experience or a combination of these, the knowledge and skill enabling that person to correctly perform the required tasks

[SOURCE: ISO 11525-1:2020, 3.4]

3.5

responsible entity

person or entity with responsibility for the design, specification, procurement, fabrication, manufacture, assembly, provision of information and testing of a truck

[SOURCE: ISO 11525-1:2020, 3.5]

3.6

maintenance

act of upkeep, including inspection, lubrication, cleaning, adjustment and scheduled parts replacement

[SOURCE: ISO 11525-1:2020, 3.6]

3.7

modification

change to the truck that affects its *operation* (3.8), *stability* (3.9), *actual capacity* (3.17) or safety

[SOURCE: ISO 11525-1:2020, 3.7, modified — The term "capacity" has been replaced by "actual capacity".]

3.8

operation

performance of functions of a truck within the scope of its specifications and in accordance with the manufacturer's instructions and work rules

[SOURCE: ISO 11525-1:2020, 3.8]

3.9

stability

ability of the truck to withstand conditions that would cause it to overturn

Note 1 to entry: Conditions that can affect stability include ground and floor conditions, gradient, speed, loading (trucks equipped with attachments behave as partially loaded trucks even when operated without a load on the attachment), dynamic and static forces, and incorrect tyre inflation and incorrect tyre type.

[SOURCE: ISO 11525-1:2020, 3.9, modified — "and incorrect tyre type" has been added to the end of Note 1 to entry.]

3.10**lorry-mounted truck**

wheeled, operator-controlled truck with a powered driving mechanism, designed either to carry, stack or tier in racks any kind of load, and capable of self-loading to, and self-unloading from, a *carrier vehicle* (3.14) using its load-lifting means

[SOURCE: ISO 20297-1:2017, 3.1, modified — The term "vehicle" has been replaced by "truck" and Note 1 to entry has been removed.]

3.11**industrial lorry-mounted truck**

lorry-mounted truck (3.10) designed for *operation* (3.8) under normal operating conditions on substantially firm, smooth, level, prepared and consolidated surfaces

[SOURCE: ISO 20297-1:2017, 3.1.1, modified — Note 1 to entry has been removed.]

3.12**rough-terrain lorry-mounted truck**

lorry-mounted truck (3.10) designed for *operation* (3.8) under normal operating conditions on unimproved natural terrain as well as the disturbed terrain of work sites

[SOURCE: ISO 20297-1:2017, 3.1.2, modified — Note 1 to entry has been removed.]

3.13**normal operating position**

position specified by the manufacturer in which the *operator* (3.3) is able to control the truck *operations* (3.8), including load-handling functions

[SOURCE: ISO 20297-1:2017, 3.13]

3.14**carrier vehicle**

lorry or trailer that is suitable for transporting a *lorry-mounted truck* (3.10) by the fitting of a suitable *mounting kit* (3.15)

[SOURCE: ISO 20297-1:2017, 3.15]

3.15**mounting kit**

structure designed to fit a *lorry-mounted truck* (3.10) to a *carrier vehicle* (3.14)

[SOURCE: ISO 20297-1:2017, 3.16]

3.16**rated capacity**

maximum load that an attachment is permitted by its manufacturer to handle in normal *operation* (3.8) under specified conditions

[SOURCE: ISO 20297-1:2017, 3.3, modified — Domain "<attachment>" and Note 1 to entry have been removed.]

3.17**actual capacity**

maximum load at a specified load centre distance, established by the manufacturer based on component strength and truck *stability* (3.9), that the truck can carry, lift and stack to a specified lift height and reach, in normal *operation* (3.8)

[SOURCE: ISO 20297-1:2017, 3.4, modified — Notes to entry have been removed.]

4 General requirements

4.1 Principles

4.1.1 This document shall be supplemented by good management practices, safety controls and the application of sound principles of safety, training, inspection, maintenance, application selection and operation. All data available regarding the parameters of intended use and the expected environment shall be considered. Those with direct control over the application and operation of the truck shall be responsible for ensuring good safety practices.

NOTE Different operating conditions can require additional safety precautions, training and special safe operating procedures.

4.1.2 The operation of any truck is subject to certain hazards that can be protected against only by the exercise of care and common sense. It is essential to have competent persons trained in the intended use, safe operation, maintenance and service of the truck and any attachment(s).

4.1.3 The user shall ensure that the operator understands that safe operation of the truck is also the operator's responsibility.

4.1.4 The user shall take reasonable measures to ensure that the operator's mental or physical condition will not impair their ability to operate the truck.

4.1.5 In addition to specific training, application selection and operation of the truck, the user shall take the following characteristics for trucks into consideration:

- these trucks are primarily designed for handling supported loads on forks;
- other attachments can be fitted.

4.1.6 The user shall take reasonable measures (for example, spot checks) to ensure that the safe use requirements are being applied during operation.

4.2 Operator's manual(s)

4.2.1 The user shall ensure that the operator's manual(s) and any additional safety manuals provided by the manufacturer of the truck and mounting kit manufacturer (if available), are always available to the operator and maintenance personnel.

4.2.2 The user, the operator, or both shall refer to the responsible entity if doubt arises on either the use of the truck or the interpretation of the operator's manual.

4.3 Modifications or alterations

4.3.1 Except as provided for below, no modifications or alterations to a truck that can affect its actual capacity, stability or safe operation shall be made without the prior written approval of the original truck manufacturer or its successor.

4.3.2 If the truck manufacturer is no longer in business and there is no successor, modifications or alterations to the truck shall be carried out by a competent person under the following conditions:

- a) the design, testing and implementation of the modification or alteration is made in accordance with ISO 20297-1:2017;
- b) a permanent record is kept of the design, tests and implementation of the modification or alteration;

- c) appropriate changes are made to the information plate(s), documents, certificates, labels, tags and operator's manual(s);
- d) a permanent and readily visible label is affixed to the truck stating the manner in which the truck has been modified or altered, together with the date of the modification or alteration, and the name of the person or organization responsible for the design, testing and implementation of the modifications.

4.3.3 Upon completion of any approved modification or alteration and prior to truck operation, the user shall ensure that the appropriate changes have been made to information plate(s), documents, certificates, labels, tags and operator's manual(s) and any training, if required.

4.4 Manufacturer's bulletins

The user shall conform to the applicable bulletins as directed by the responsible entity.

4.5 Operator qualifications and training

4.5.1 Users shall only allow competent and authorized persons to operate a truck and are responsible for ensuring that the operator has been trained in accordance with ISO 23676.

4.5.2 The user shall ensure that the operator has read and is familiar with the operator's manual(s) and any other safety information provided by the manufacturer and user on the particular truck being operated, the application and environment in which the truck is to be used, and any attachments used.

4.5.3 The user shall ensure that the operator is familiar with worksite rules and layout, working conditions, handling of loads found at the workplace and local emergency procedures.

4.6 Inspection and maintenance

4.6.1 General

4.6.1.1 The inspection and maintenance of trucks shall be performed in accordance with the manufacturer's and user's recommendations. This includes:

- a) a planned system for scheduled inspection, lubrication, maintenance and adjustment;
- b) verification that only competent and authorized persons are permitted to maintain, repair, rebuild, adjust, and inspect trucks, in accordance with the manufacturer's recommendations.

4.6.1.2 The user shall ensure that inspections and maintenance operations are conducted in an authorized area where safe clearances exist.

4.6.1.3 The user shall ensure that appropriate personal protective equipment is available for use by the authorized person.

4.6.2 Preparation for inspection or repair

In preparation for, and prior to, starting inspection or repair of a truck the authorized person shall:

- park the truck on a firm level surface;
- set the direction control in neutral, apply the parking brake, switch off the engine or power system and remove the device (for example, key, key pad, magnetic card) that prevents starting without use of such device;