

# Aircraft ground equipment — Design, test and maintenance for towbarless towing vehicles (TLTV) interfaced with nose-landing gear —

## Part 1: Main-line aircraft

ICS 49.100

# National foreword

This British Standard was published by BSI. It is the UK implementation of ISO 20683-1:2005.

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A list of organizations represented on ACE/57 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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## **Aircraft ground equipment — Design, test and maintenance for towbarless towing vehicles (TLTV) interfaced with nose-landing gear —**

### **Part 1: Main-line aircraft**

*Matériels au sol pour aéronefs — Conception, essais et entretien des  
tracteurs sans barre (TLTV) s'accouplant au train d'atterrissage avant —*

*Partie 1: Aéronefs de ligne*



Reference number  
ISO 20683-1:2005(E)

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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.

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 20683-1 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 9, *Air cargo and ground equipment*.

ISO 20683 consists of the following parts, under the general title *Aircraft ground equipment — Design, test and maintenance for towbarless towing vehicles (TLTV) interfaced with nose-landing gear*:

- *Part 1: Main-line aircraft*
- *Part 2: Regional aircraft*

## Introduction

This part of ISO 20683 specifies design, testing, maintenance and associated requirements to be applied on towbarless aircraft-towing vehicles to be used on main-line civil transport aircraft in order to ensure their operation cannot result in damage to aircraft nose-landing gears, their steering systems, or associated aircraft structure.

Throughout this part of ISO 20683, the minimum essential criteria are identified by the use of the key word “shall”. Other recommended criteria are identified by the use of the key word “should” and, while not mandatory, are considered to be of primary importance in providing safe and serviceable towbarless tractors. Alternative solutions may be adopted only after careful consideration, extensive testing and thorough service evaluation have shown them to be equivalent.

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# Aircraft ground equipment — Design, test and maintenance for towbarless towing vehicles (TLTV) interfaced with nose-landing gear —

## Part 1: Main-line aircraft

### 1 Scope

This part of ISO 20683 is applicable to towbarless towing vehicles (TLTVs) interfacing with the nose-landing gear of main-line civil transport aircraft with a maximum ramp mass over 50 000 kg (110 000 lb). The requirements for regional transport aircraft with a lower maximum ramp mass are specified in ISO 20683-2. It is not applicable to TLTVs which were manufactured before its date of publication.

This part of ISO 20683 specifies general design requirements, testing and evaluation requirements, maintenance, calibration, documentation, records, tracing and accountability requirements in order to ensure that the loads induced by the tow vehicle will not exceed the design loads of the nose gear or its steering system, or reduce the certified safe life limit of the nose gear, or induce a stability problem during aircraft push-back and/or gate relocation or maintenance towing operations.

This part of ISO 20683 specifies requirements and procedures for TLTVs intended for aircraft push-back and gate relocation or maintenance towing only. It is not intended to allow for dispatch (operational) towing (see Clause 3). Dispatch towing imposes greater loads on nose gears and aircraft structure due to the combination of speed and additional passenger, cargo, and fuel loads.

This part of ISO 20683 does not apply to TLTVs interfacing with aircraft main landing gear.

NOTE See also informative references in the Bibliography.

### 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 6966-1, *Aircraft ground equipment — Basic requirements — Part 1: General design requirements*

ISO 6966-2, *Aircraft ground equipment — Basic requirements — Part 2: Safety requirements*

Federal Aviation Regulations (FAR) 14 CFR Part 25, *Airworthiness Standards: Transport category airplanes*, paragraphs 25.301, *Loads*, and 25.509, *Towing loads* <sup>1)</sup>

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<sup>1)</sup> FAR Part 25 constitutes U.S.A. Government transport aircraft airworthiness Regulations, and can be obtained from: US Government Printing Office, Mail Stop SSOP, Washington DC 20402-9328, U.S.A.