INTERNATIONAL STANDARD

ISO 9667

First edition
1998-12-15

Aircraft ground support equipment — Tow bars

Équipement au sol pour aéronefs — Barres de tractage

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 9667 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 9, *Air cargo and ground equipment*.

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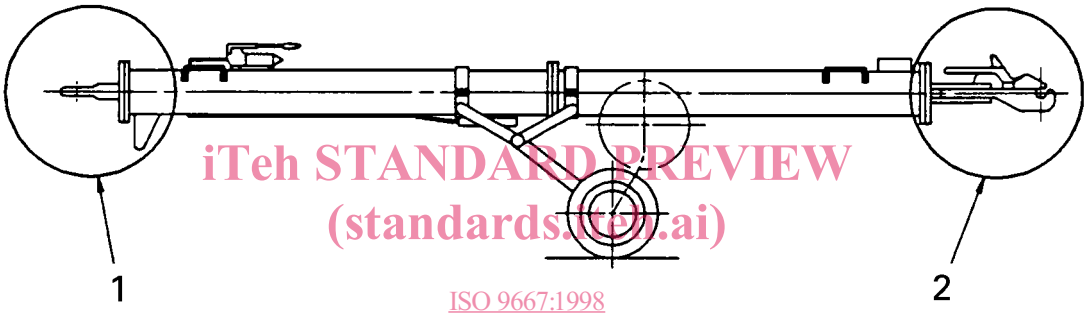
Printed in Switzerland

Aircraft ground support equipment — Tow bars

This International Standard specifies dimensional and physical requirements of tow bar connections to tractor and aircraft (see figure 1). It is applicable to any new type of commercial transport category aircraft tow bar designed or built after publication of this standard.

The purpose of this International Standard is to standardize tow bar attachments to airplane and tractor according to the mass category of the towed aircraft, so that one tow bar head with different shear levels can be used for all aircraft that are within the same mass category and are manufactured in compliance with ISO 8267.



Key

1 Tractor connection
2 Aircraft connection

Figure 1 — Tow bar

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 8267:1997, *Tow bar attachment fittings for transport aircraft with a maximum ramp mass over 50 000 kg (110 100 lb) — Interface requirements*.

3 Aircraft mass categories

The aircraft mass categories shall be in accordance with ISO 8267.

4 Aircraft connection

4.1 Dimension of tow bar connection to aircraft

The standard configuration of the tow bar connection to the aircraft shall be compatible with the horizontal pin of the aircraft tow bar attachment fitting as specified in ISO 8267.

4.2 Aircraft interface requirements

The design of the tow bar aircraft connection device that clamps to the horizontal cylindrical pin of the aircraft:

— shall grip the pin uniformly over 96 % to 98 % of its length;

— shall be designed to eliminate inadvertent disengagement of the tow bar during towing or pushing operations;

— shall be designed to provide adequate clearance during engagement and disengagement of the tow bar from the aircraft connection (allowable space envelope for clearance is specified in ISO 8267);

— should be adjustable to provide pressure on the pin when locked.

4.3 Aircraft protective provisions

4.3.1 General requirements

The tow bar should be so constructed to prevent any item from becoming a Foreign Object Damage (FOD) hazard, e.g. broken parts of the shear pin and any bushes always remain captive to prevent aircraft engine ingress.

The tow bar shall incorporate devices to protect the aircraft from damage due to towing which shall:

— relieve fore/aft and torsional towing forces applied to the aircraft nose gear through the tow bar which exceed the maximum force recommendations of the aircraft manufacturer;

— simultaneously alert the tow tractor operator, audibly, visually or both, that a device has been actuated;

— be replaceable or repairable with a minimum of effort.

4.3.2 Shear pins

If shear pins are used as a protective device, they shall:

— have a non-standard diameter to discourage hazardous replacement and encourage the exclusive use of manufacturer's original parts;

— shear at the nominal force specified by the aircraft manufacturer(s) within a relative tolerance of $\binom{0}{-10}$ %;

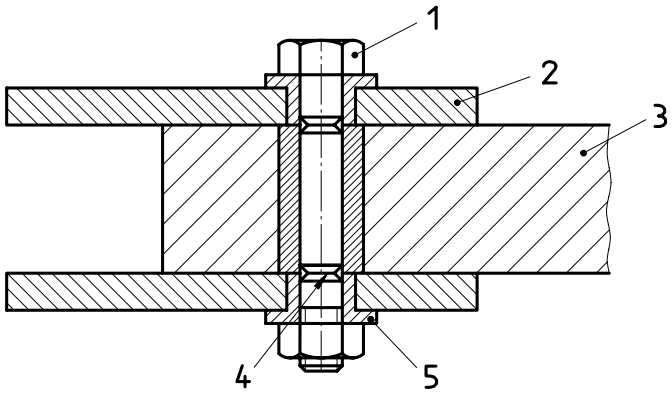
— have a specific predetermined shear plane, whether provided with or without hardened bushings (see figure 2).

4.3.3 Marking

The tow bar shall be clearly and indelibly marked to identify the allowable type(s) of aircraft and maximum towing force.

5 Tractor connection

The attachment on the tow bar for connection to the tractor shall be as shown in figure 3 for all mass categories as specified in clause 3.



Key

1 Shear pin
2 Caliper plate(s)
3 Head
4 Preset shear plane
5 Bushings

NOTE Do not clamp up assembly.

Figure 2 — Typical shear pin/bushing configuration

Dimensions in millimetres
(values in inches in parentheses)

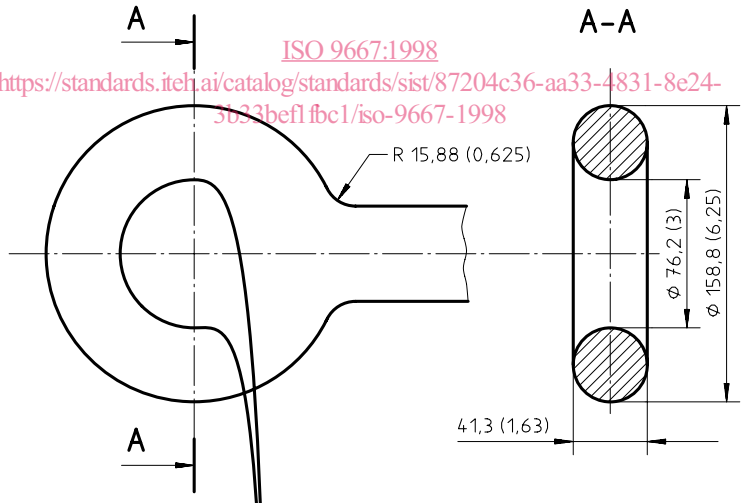


Figure 3 — Dimensions of tow bar eye (tractor connection)

ICS 49.100

Descriptors: aircraft, aircraft utility equipment, towing attachments, drawbars, specifications, dimensions, interfaces, marking.

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