
**Agricultural trailers and trailed
equipment — Drawbar jacks —**

**Part 1:
Design safety, test methods and
acceptance criteria**

Remorques agricoles et matériel traîné — Béquilles d'attelage —

*Partie 1: Sécurité par conception, méthode d'essai et critères
d'acceptation*

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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 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 3, *Safety and comfort*.

This first edition of ISO 12140-1, together with ISO 12140-2, cancels and replaces ISO 12140:2013, which has been technically revised.

The main changes compared to the previous edition are as follows:

- the application requirements have been moved to a separate part (i.e. ISO 12140-2);
- the term used for describing machinery types has been clarified.

A list of all parts in the ISO 12140 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.

Agricultural trailers and trailed equipment — Drawbar jacks —

Part 1: Design safety, test methods and acceptance criteria

1 Scope

This document specifies criteria for construction, establishes performance test methods and defines acceptance criteria for telescopic mechanical screw- and nut-type drawbar jacks and hydraulic drawbar jacks intended to be fitted on the implement tongue of interchangeable towed machinery [here after referred to as "implement(s)"] as original equipment or as replacement jacks. In addition, it specifies minimum markings and information for use to be provided by the jack manufacturer.

These jacks are used specifically for

- supporting the hitch points of implements during storage;
- lifting and lowering of implement tongues to facilitate attaching to or disconnecting from an agricultural tractor; and
- levelling an implement for stationary use.

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 cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

3 Terms and definitions

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

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

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

3.1 jack

hand or power-operated telescopic mechanism with a ground contact pad (base) or wheel and fixing point [*jack mount* (3.11) or mounting point] designed for controlled vertical movement

Note 1 to entry: A hand-operated jack typically uses mechanical means to control vertical movement. A powered-operated jack typically uses hydraulic fluid displacement to control vertical movement.

3.2 static compressive load

vertical force used to support the intended application under static conditions

3.3

dynamic compressive load

vertical force used to lift the intended application measured during actuation of the jack

3.4

static tensile load

force opposite of *static compressive load* (3.2) resulting in a tension load applied to the *jack* (3.1)

3.5

dynamic tensile load

force opposite of dynamic *compressive load* (3.3) resulting in a tension load applied to the *jack* (3.1)

3.6

side load

<fore-aft>force applied in a plane perpendicular to the longitudinal axis of the *jack* (3.1) in a direction generally aligning with the towing direction of the implement

3.7

side load

<lateral>force applied in a plane perpendicular to the longitudinal axis of the *jack* (3.1) at right angles to the general towing direction of the implement

3.8

screw and nut

threaded shaft and nut that transforms rotational motion of the *crank assembly* (3.13) into linear motion of the *jack* (3.1)

3.9

outer tube

tube with the largest cross-sectional dimension

3.10

inner tube

free-moving and generally smaller tube moving within the *outer tube* (3.9)

3.11

jack mount

portion of the *outer tube* (3.9) that mates with the implement mount

3.12

swivel mount

mounting method that allows the *jack* (3.1) to be rotated to a storage position without removing the jack from the implement

3.13

crank assembly

device used to actuate the *screw* (3.8) to extend or retract the *jack* (3.1)

3.14

base

contact pad

bottom load bearing portion of the *inner tube* (3.10) or drop leg, if provided, that transmits force to the ground or floor

3.15

jack cycle

extension of the jack through 65 % of the jack travel and retraction back to its original length

Note 1 to entry: If a particular jack has added travel for the purpose of greater unloaded range, the jack cycle can be based on 65 % of the normal travel.