ASABE/ISO 12140:2013 JUN2014
Agricultural machinery — Agricultural trailers and trailed equipment — Drawbar jacks

American Society of Agricultural and Biological Engineers

STANDARD

ASABE is a professional and technical organization, of members worldwide, who are dedicated to advancement of engineering applicable to agricultural, food, and biological systems. ASABE Standards are consensus documents developed and adopted by the American Society of Agricultural and Biological Engineers to meet standardization needs within the scope of the Society; principally agricultural field equipment, farmstead equipment, structures, soil and water resource management, turf and landscape equipment, forest engineering, food and process engineering, electric power applications, plant and animal environment, and waste management.

NOTE: ASABE Standards, Engineering Practices, and Data are informational and advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. The ASABE assumes no responsibility for results attributable to the application of ASABE Standards, Engineering Practices, and Data. Conformity does not ensure compliance with applicable ordinances, laws and regulations. Prospective users are responsible for protecting themselves against liability for infringement of patents.

ASABE Standards, Engineering Practices, and Data initially approved prior to the society name change in July of 2005 are designated as "ASAE", regardless of the revision approval date. Newly developed Standards, Engineering Practices and Data approved after July of 2005 are designated as "ASABE".

Standards designated as "ANSI" are American National Standards as are all ISO adoptions published by ASABE. Adoption as an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by ASABE.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

CAUTION NOTICE: ASABE and ANSI standards may be revised or withdrawn at any time. Additionally, procedures of ASABE require that action be taken periodically to reaffirm, revise, or withdraw each standard.

Copyright American Society of Agricultural and Biological Engineers. All rights reserved.

ASABE, 2950 Niles Road, St. Joseph, MI 49085-9659, USA, phone 269-429-0300, fax 269-429-3852, hq@asabe.org

Documents
Document Sharing Hub

Copyright American Society of Agricultural and Biological Engineers
Provided by IHS Markit under license with ASABE
No reproduction or networking permitted without license from IHS
Full document details: ASAE ISO 12140 2014

Licensee=/, User=,
Not for Resale,

ASABE/ISO 12140:2013 JUN2014
Approved June 2014 as an American National Standard

Agricultural machinery — Agricultural trailers and trailed equipment — Drawbar jacks

These materials are subject to copyright claims of ISO and ASABE. No part of this publication may be reproduced in any form, including an electronic retrieval system, without the prior written permission of ASABE. All requests pertaining to ASABE/ISO 12140:2013 JUN2014 standard should be submitted to ASABE.

History of ASAE S485: Developed by the ASAE Implement Jacks Committee; approved by the Power and Machinery Standards Division Committee; adopted by ASAE October 2001; reaffirmed February 2006; revised April 2007, revised November 2010; revised April 2011.

ASAE S485 was used as the basis document for ISO 12140:2013. Agricultural machinery — Agricultural trailers and trailed equipment — Drawbar jacks. ASAE S485 replaced by an adoption of ISO 12140:2013 June 2014. Adoption approved as an American National Standard June 2014.

Keywords: Implement, Jack, Safety

0 Foreword

0.1 ASABE/ISO 12140:2013, Agricultural machinery — Agricultural trailers and trailed equipment — Drawbar jacks, is an adoption without modifications of the identically titled ISO standard ISO 12140:2013, Agricultural machinery — Agricultural trailers and trailed equipment — Drawbar jacks.

0.2 ASABE/ISO 12140:2013 specifies terms and definitions, establishes test procedures, and creates minimum performance requirements for telescopic mechanical screw-type jacks or hydraulic jacks mounted on agricultural implements as original equipment and/or replacement jacks.

Furthermore, this International Standard defines terms, establishes test procedures, and creates minimum acceptance criteria for the use of telescopic mechanical screw-type jacks or hydraulic jacks mounted on agricultural implements as original equipment jacks or jacks fitted with a jack attachment mounts (both weld-on and removable). 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 towed agricultural implements during storage;

— lifting and lowering of implement hitches to facilitate attaching to or disconnecting from an agricultural tractor or other agricultural machines;

— levelling of machinery for stationary use.

NOTE Drawbar jacks as part/component of a machine are also covered by ISO 4254-1:2013

0.3 Two normative references are listed in ISO 12140:2013. These references have been reviewed and accepted as part of the adoption of ASABE/ISO 12140:2013.

0.4 This standard has been approved as an American National standard by ANSI (American National Standards Institute). The original content of ISO 12140 was based on ASAE S485.

Text of ISO 12140:2013, Agricultural machinery — Agricultural trailers and trailed equipment — Drawbar jacks, follows.

Documents
Document Sharing Hub
Copyright American Society of Agricultural and Biological Engineers
Provided by IHS Markit under license with ASABE
No reproduction or networking permitted without license from IHS
Licensee=/, User=,
Not for Resale,
Full document details: ASAE ISO 12140 2014

1 Scope

This International Standard specifies terms and definitions, establishes test procedures, and creates minimum performance requirements for telescopic mechanical screw-type jacks or hydraulic jacks mounted on agricultural implements as original equipment and/or replacement jacks.

Furthermore, this International Standard defines terms, establishes test procedures, and creates minimum acceptance criteria for the use of telescopic mechanical screw-type jacks or hydraulic jacks mounted on agricultural implements as original equipment jacks or jacks fitted with a jack attachment mounts (both weld-on and removable). 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 towed agricultural implements during storage;

— lifting and lowering of implement hitches to facilitate attaching to or disconnecting from an agricultural tractor or other agricultural machines;

— levelling of machinery for stationary use.

NOTE Drawbar jacks as part/component of a machine are also covered by ISO 4254-1:2013.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4413, Hydraulic fluid power — General rules and safety requirements for systems and their components

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.

3.1

jack

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

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

3.2

towed agricultural implement

machine or device that is designed to perform agricultural field operations and is pulled by an agricultural tractor or other agricultural machine and is usually equipped with wheels required for transport

3.3

static compressive load

vertical force measured at the jack location under static conditions

Documents Document Sharing Hub

Copyright American Society of Agricultural and Biological Engineers
Provided by IHS Markit under license with ASABE
No reproduction or networking permitted without license from IHS
Licensee=/, User=,
Not for Resale,
Full document details: ASAE ISO 12140 2014

3.4

dynamic compressive load

vertical force measured at the jack location during jack extension (lifting)

3.5

static tensile load

force opposite of static compressive load resulting in a tension load applied to the jack

3.6

dynamic tensile load

force opposite of dynamic compressive load resulting in a tension load applied to the jack

3.7

side load

<fore-aft> force applied in a plane perpendicular to the longitudinal axis of the jack in a direction generally aligning with the towing direction of the towed agricultural implement

3.8

side load

<lateral> force applied in a plane perpendicular to the longitudinal axis of the jack at right angles to the general towing direction of the towed agricultural implement

3.9

screw and nut

threaded portion of the jack that transforms rotational motion of the crank assembly into linear motion of the jack

3.10

screw travel

total change in length of the jack from a fully retracted to a fully extended condition caused by screw movement only

3.11

swivel mount

jack mounting method that allows the jack to be rotated to a storage position without removing the jack from the towed implement

3.12

crank assembly

portion of the jack consisting of a crank and knob used to actuate the screw to extend or retract the jack

3.13

side wind jack

assembly of crank, knob, outer tube, inner tube and screw/nut that causes the extension or retraction of the jack when the crank assembly is rotated about an axis perpendicular to the screw travel

3.14

top wind jack

assembly of crank, knob, outer tube, inner tube and screw/nut that causes the extension or retraction of the jack when the crank assembly is rotated about an axis of rotation parallel to the screw travel

Documents
Document Sharing Hub
Copyright American Society of Agricultural and Biological Engineers
Provided by IHS Markit under license with ASABE
No reproduction or networking permitted without license from IHS
Licensee=/, User=,
Not for Resale,
Full document details: ASAE ISO 12140 2014