# SLOVENSKI STANDARD
# SIST EN 1494:2002+A1:2009

**01-marec-2009**

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**Premiļne ali prenosne dvigne naprave in spremljajoļa dvigna oprema**

Mobile or movable jacks and associated lifting equipment

Fahrbare oder ortsveränderliche Hubgeräte und verwandte Einrichtungen

Crics mobiles ou déplaçables et équipements de levage associés



**Ta slovenski standard je istoveten z:** **EN 1494:2000+A1:2008**

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**ICS:**

53.020.99 Druga dvigalna oprema Other lifting equipment

**SIST EN 1494:2002+A1:2009** **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 1494:2000+A1

December 2008

ICS 53.020.99

Supersedes EN 1494:2000

English Version

# Mobile or movable jacks and associated lifting equipment

Crics mobiles ou déplaçables et équipements de levage associés

Fahrbare oder ortsveränderliche Hubgeräte und verwandte Einrichtungen

This European Standard was approved by CEN on 18 October 2000 and includes Amendment 1 approved by CEN on 9 November 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

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# Foreword

This (EN 1494:2000+A1:2008) has been prepared by Technical Committee CEN/TC 98 "Lifting platforms", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-11-09.

This document supersedes EN 1494:2000.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

[A1] For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this standard. [A1]

[A1] *deleted text* [A1]



According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

# Introduction

〚A1〛 This European Standard is a type C standard as stated in EN ISO 12100-1:2003. 〚A1〛

This standard has been prepared to be a harmonised standard to provide one means of conforming with the essential Safety Requirements of the Machinery Directive and associated EFTA Regulations.

The object of this European Standard is to define rules for safeguarding persons against the risk of accidents associated with the operation of mobile or movable jacks.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery should comply as appropriate with 〚A1〛 EN ISO 12100 〚A1〛 for hazards which are not covered by this standard.

While producing this standard it was assumed that

— only trained persons operate the lifting equipment;

— the working area is adequately light;

— harmful materials such as asbestos are not used;



— components are kept in good repair and working order;

— by design of the load bearing elements a safe operation of the machine is assured for loads up to 100 % of the rated load and during the tests under the conditions given by the manufacturer;



— a negotiation for special uses took place between the user and the manufacturer;

— components without specific requirements are

a) designed in accordance with the usual engineering practice and calculation methods, including all failure modes;

b) of sound mechanical and electrical construction;

c) made of materials with adequate strength and of suitable quality.

## 1 Scope

This European Standard specifies technical safety requirements and measures for mobile or movable jacks (see 3.6) and associated lifting equipment.

This European Standard deals with all significant hazards pertinent to mobile or movable jacks and associated lifting equipment when they are used as intended and under the conditions foreseen by the manufacturer. This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards.

This standard applies to lifting equipment (see 3.1) which are mobile or movable and designed to operate under the load, whether operated singulary or in multiples to partially or totally raise and lower loads or vehicles at one or more lifting points (excluding the lifting of persons) where working under the raised load is not permitted unless additional means of securing the load in position are in place.

NOTE Associated lifting equipment means lifting equipment which is similar to those defined in 3.1, but which does not fully comply with these definitions.

This standard does not establish additional requirements for

— power drive by an internal combustion machine;

— stability of the mobile or movable jacks and associated lifting equipment;

— operation in severe conditions (e.g. extreme climates, freezer application, strong magnetic fields);

— operation subject to special rules (e.g. potentially explosive atmospheres, mines);

— supply by electrical networks where the tolerances in voltage, frequency etc. differ from those in the public supplies;

— static electric problems;

— handling of loads, the nature of which could lead to dangerous situations (e.g. molten metal, acids, radiating materials, especially brittle loads);

— hazards occurring during producing and decommissioning;

— hazards occurring when using the lifting equipment on public roads;

— wind pressure in and out of use;

— direct contact with foodstuffs;

— operation on sea ships.



This standard applies e.g. to the following lifting equipment

— mechanical jacks with or without claw;

— hydraulic jacks with or without claw and with or without integrated pump, e. g. hydraulic trolley jacks, hydraulic transmission jacks, hydraulic pit jacks;

— pneumatic jacks.

This standard does not apply to

a) jacks or stabilizers which are permanently fixed to a trailer or a container to support a trailer or container without the tractor-unit;

b) hydraulic cylinders which are permanently fixed to the vehicle for tipping and/or tilting parts of it;

c) support stands with the possibility for changing the lift height only without the load;

d) hydraulic lifting equipment working with a maximum pressure exceeding 500 bar and where pump and cylinder are not integrated parts of the same equipment;

e) jacks that are delivered with road vehicles for helping when a break-down occurs (including delivery of original spare parts).

## 2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication applies (including amendments).

〉A1〈 *deleted text* 〉A1〈

EN 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 811, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs*

EN 954-1:1996, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

〉A1〈 *deleted text* 〉A1〈

EN 60204-32, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:1998)*

EN 60947-5-1:1997, *Low-voltage switchgear and controlgear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices (IEC 60947-5-1:1997)*

EN 61496-1:1997, *Safety of machinery — Electro-sensitive protective devices — Part 1: General requirements and tests (IEC 61496-1:1997)*



EN ISO 4871, *Acoustics— Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*



EN ISO 11201:1995, *Acoustics— Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*

〉A1〈 EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)* 〉A1〈

## 3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply:

**3.1**
**lifting equipment**
device which permits a load to be raised, lowered or moved.

Lifting equipments within the meaning of this standard are:

**3.1.1**
**mechanical jack**
Jack in which the load is moved by means of mechanical devices, e. g. rack and pinion jack, screw type bottle jack or mechanical elevator such as a mechanical transmission jack. The jack can also be equipped with claws.

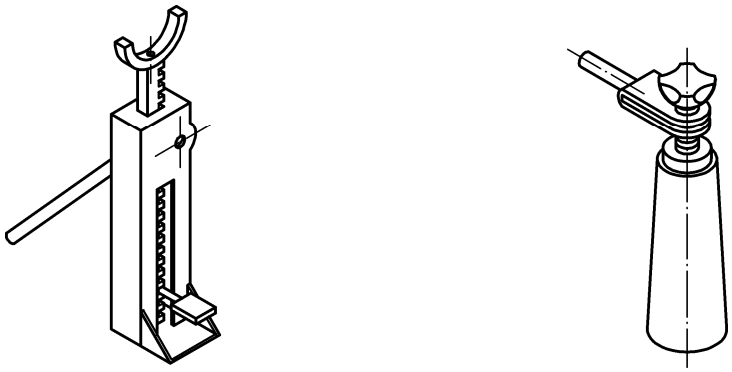


**Figure 1 — Examples of mechanical jacks**

**3.1.2**
**hydraulic jack**
jack in which the load is moved by means of hydraulic

NOTE All types of hydraulic jacks can exist in principle also as pneumatic jack.



**3.1.2.1**
**hydraulic jack with integrated pump**
hydraulic jack where the pump is integrated in the jack



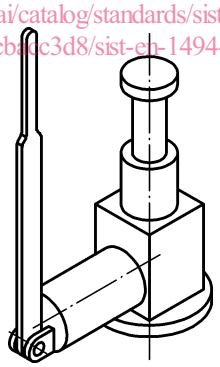


**Figure 2 — Example of hydraulic jack with integrated pump**

**3.1.2.2**
**hydraulic jack without integrated pump**
hydraulic jack where the pump is not integrated in the jack

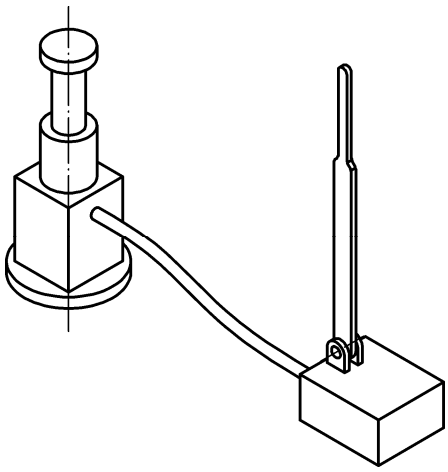


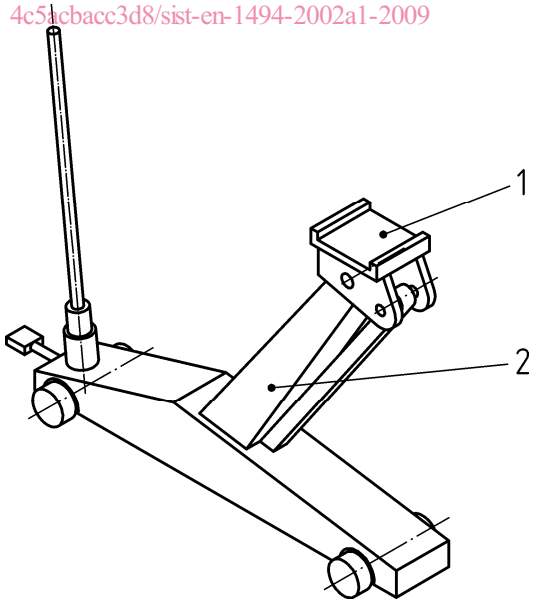
**Figure 3 — Example of hydraulic jack without integrated pump**

**3.1.2.3**
**hydraulic claw jack**
Hydraulic jack equipped with a claw. This does not exclude an additional lift pad.



**3.1.2.4**
**hydraulic trolley jack**
manually movable trolley device of which the carried load is set in vertical movement by a hydraulic system






**Key**
1 lift pad
2 lifting beam

**Figure 4 — Example of hydraulic trolley jack**

**3.1.2.5**
**hydraulic transmission jack**
hydraulic jack mobile freely on the ground, designed to lift loads or to partially lift vehicles

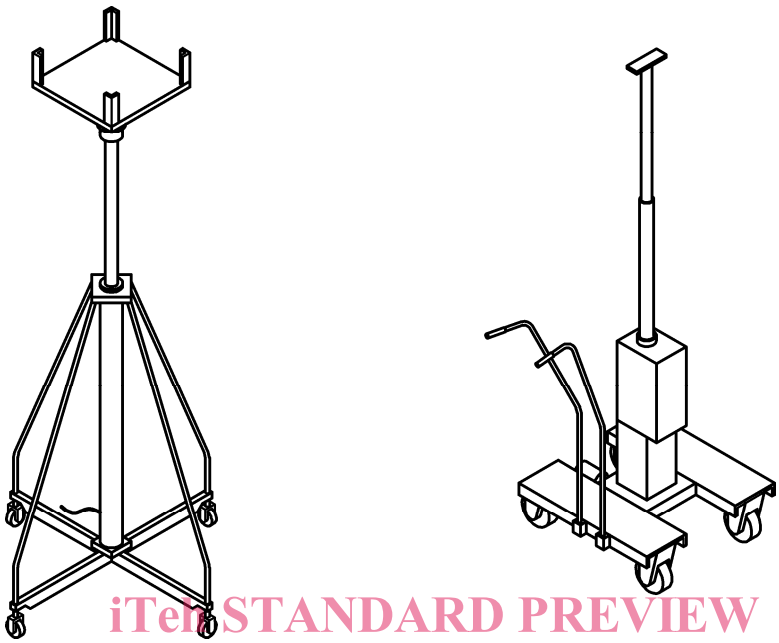




**Figure 5 — Examples of hydraulic transmission jacks**

**3.1.2.6**
**hydraulic pit jack**
rail guided hydraulic jack on cradle designed to lift loads or to partially lift vehicles

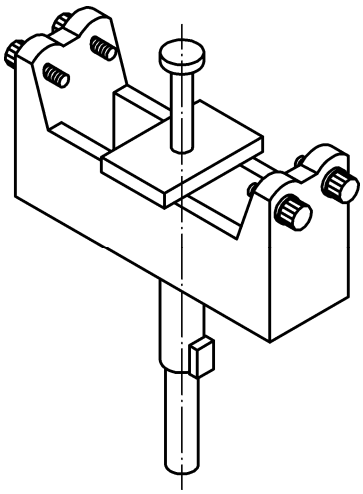


**Figure 6 — Example of hydraulic pit jack**

**3.1.3**
**pneumatic jack**
jack of which the carried load is set in vertical movement by a pneumatic system (see note in 3.1.2)



## 3.2 Power sources for lifting equipment

**3.2.1**
**manual**
the drive results on muscular force



**3.2.2**
**pneumatic**
the drive results on gaseous substances under pressure

**3.2.3**
**hydraulic**
the drive results on hydraulic fluid under pressure

**3.2.4**
**electric**
the drive results on electrical energy

**3.3**
**power driven jack**
jack in which the drive does not result on muscular force

**3.4**
**stroke**
maximum powered vertical distance that the lifting point can cover

## 3.5 Loads

**3.5.1**
**rated load**
maximum load that a lifting equipment has been designed to carry throughout the whole stroke when operated as intended by the manufacturer and which is marked on the load plate