

KRAANAD. LAADURKRAANAD

Cranes - Loader cranes

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12999:2020+A1:2025 sisaldab Euroopa standardi EN 12999:2020+A1:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.03.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12999:2020+A1:2025 consists of the English text of the European standard EN 12999:2020+A1:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 12.03.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 53.020.20

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EUROPEAN STANDARD

EN 12999:2020+A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Cranes - Loader cranes

Appareils de levage à charge suspendue - Grues de
chargement

Krane - Ladekrane

This European Standard was approved by CEN on 10 August 2020 and includes Amendment 1 approved by CEN on 20 January 2025.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents	Page
European foreword.....	6
Introduction.....	7
1 Scope.....	8
2 Normative references.....	8
3 Terms, definitions, illustration of parts and abbreviated terms.....	10
3.1 Terms and definitions.....	10
3.1.1 Loader crane.....	10
3.1.2 Components.....	11
3.1.3 Hydraulics.....	13
3.1.4 Kinematics.....	13
3.1.5 Loads.....	14
3.1.6 Moments.....	14
3.1.7 Valves.....	15
3.1.8 Miscellaneous.....	15
3.2 Illustration of parts.....	15
3.3 Abbreviated terms.....	17
4 List of significant hazards.....	17
5 Safety requirements and/or protective/risk reduction measures.....	20
5.1 General.....	20
5.2 Structural calculation.....	20
5.2.1 Information to be given in the calculation.....	20
5.2.2 Dynamic factors.....	21
5.2.3 Loads and forces.....	23
5.2.4 Load combinations.....	25
5.3 Stress analysis.....	26
5.3.1 General.....	26
5.3.2 Bolted connections.....	27
5.4 Mechanical arrangements.....	27
5.4.1 Stabilizers.....	27
5.4.2 Manual boom extensions.....	28
5.4.3 Securing for transport.....	28
5.4.4 Hoists.....	29
5.4.5 Load hooks.....	29
5.5 Hydraulic system.....	29
5.5.1 General.....	29
5.5.2 Pump.....	29
5.5.3 Hydraulic reservoir.....	30
5.5.4 Pressure limiting device.....	30
5.5.5 Hoses, tubes and fittings.....	30
5.5.6 Precautions against hydraulic line rupture.....	30
5.5.7 Sink rate for boom system.....	31
5.5.8 Slewing mechanism.....	31
5.6 Limiting and indicating devices.....	31
5.6.1 General.....	31
5.6.2 Rated capacity limiter.....	34
5.6.3 Lowering facility.....	34

5.6.4	Rated capacity indicators	34
5.6.5	Limiters	35
5.6.6	Operational warning	35
5.6.7	Acoustic warning	35
5.6.8	Stopping device	35
5.7	Controls	36
5.7.1	General	36
5.7.2	Symbols	36
5.7.3	Layout of bi-directional controls	37
5.7.4	Guidance for high seat controls	37
5.8	Control stations	37
5.8.1	General	37
5.8.2	Raised control stations	39
5.9	Electrical systems	40
5.9.1	General	40
5.9.2	Electromagnetic compatibility	40
5.10	Installation	40
5.10.1	General	40
5.10.2	Mounting	40
5.10.3	Stability	41
5.10.4	Noise	42
5.10.5	Vibrations	42
5.10.6	Electrical systems (installation)	42
5.10.7	Hydraulic components	42
5.10.8	Access	42
6	Verification of the safety requirements and/or protective/risk reduction measures	43
6.1	General	43
6.2	Testing and test procedures	48
6.2.1	General	48
6.2.2	Functional test	48
6.2.3	Static test	48
6.2.4	Dynamic test	49
6.2.5	Stability test	49
6.2.6	Test documentation	52
6.2.7	A1 Documentation of variable rated capacity A1	52
6.3	Noise emission measurement	53
7	Information for use	53
7.1	General	53
7.2	Instructions	53
7.2.1	Provision of instructions	53
7.2.2	Instructions for the installer	53
7.2.3	Instructions for use	54
7.2.4	Maintenance instructions	56
7.3	Marking	56
7.3.1	General	56
7.3.2	Manufacturer's plate	56
7.3.3	Installer's plate	56
7.3.4	Load signs	57
7.3.5	Special signs on timber handling cranes	62
7.3.6	Marking of slewing centre	64
7.3.7	Marking of maximum ground load	64
7.3.8	Marking for high seat	64

Annex A (informative) Examples of configurations and mountings	65
A.1 Boom systems	65
A.1.1 Loader cranes with straight boom system	65
A.2 Examples of loader crane mountings	66
Annex B (informative) Stress history parameter s and stress history classes S	72
Annex C (informative) Explanatory notes	76
C.1 Rated capacity limiters	76
C.2 Safety functions of the rated capacity limiter	76
C.3 Timber handling cranes – Line rupture	77
C.4 Control stations	78
Annex D (informative) Examples of dangerous movements	79
Annex E (normative) Symbols for working and setting-up functions	81
Annex F (informative) Control system – Preferred vertical layout for controls operated from the ground	83
Annex G (informative) Control system – Horizontal layout order	85
Annex H (informative) Control levers for high seats and remote controls	88
H.1 High seat controls	88
H.1.1 Multidirectional (joy-stick) controls	88
H.1.2 Bi-directional controls	88
H.2 Remote controls	88
Annex I (normative) Ⓐ Crane cabins fitted on vehicle mounted loader cranes up to a net lifting moment of 250 kNm Ⓐ	91
Annex J (informative) Examples of raised control stations	94
Annex K (normative) Raised control stations – Measures regarding handrails and handholds, ladders and steps	97
Annex L (informative) Installation of a loader crane on a vehicle	100
L.1 General	100
L.2 Installation: minimum data	100
L.2.1 Crane dimensions in transport position: data	100
L.2.2 Crane data (see Figure L.2)	100
L.2.3 Mounting data	101
L.2.4 Power requirements	101
L.2.5 Stability calculations: data	101
L.3 Power take off (PTO) and pump displacement	102
L.4 Calculation method for determination of sub-frame dimensions	103
L.4.1 General considerations	103
L.4.2 Stresses	103

L.4.3 Strength calculation of sub-frame	103
Annex M (informative) Selection of a suitable set of crane standards for a given application	106
Annex ZA (informative) Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered	108
Bibliography	112

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European foreword

A1 This document (EN 12999:2020+A1:2025) has been prepared by Technical Committee CEN/TC 147 “Cranes - Safety”, the secretariat of which is held by SFS.

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 September 2025, and conflicting national standards shall be withdrawn at the latest by September 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12999:2020.

The major changes are the following:

- addressing the risk to be crushed by stabilizer legs with powered tilting devices (5.8.1, 5.6.1.3, C.2.5);
- clarification of cabin type (crane or vehicle) throughout the document;
- clarifying that timber handling cranes may only be operated from a high seat or a cabin (5.8.1);
- changing into a recommendation the requirement to make an additional stability test after having completed a stability test with the test pressure method (6.2.5.3);
- adding requirement of sufficient field of view when operating the crane from the vehicle cabin (5.8.1).

This document includes Amendment 1 approved by CEN on 20 January 2025.

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

This document has been prepared under a standardisation request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom. **A1**

Introduction

This document is a harmonized standard to provide one means for loader cranes to conform to the essential health and safety requirements of the Machinery Directive 2006/42/EC.

This document is a type-C standard as stated in EN ISO 12100:2010.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

The machinery concerned and the extent to which hazards are covered are indicated in the scope of this document.

1 Scope

This document specifies minimum requirements for design, calculation, examinations and tests of hydraulic powered loader cranes and their mountings on vehicles or static foundations.

This document applies to loader cranes designed to be installed on:

- road vehicles, including trailers, with load carrying capability;
- tractors (road or agricultural), where only a towed trailer has capability to carry goods;
- demountable bodies to be carried by any of the above;
- other types of carriers (e.g. separate loaders, crawlers, rail vehicles, non-seagoing vessels);
- static foundations.

This document also applies to loader cranes equipped with special tools or interchangeable equipment (e.g. grapple, clamshell bucket, pallet clamp, etc.), as specified in the operator's manual.

This document does not apply to loader cranes used on board sea going vessels or to articulated boom system cranes which are designed as total integral parts of special equipment such as forwarders.

The hazards covered by this document are identified in Clause 4.

This document does not cover hazards related to the lifting of persons.

NOTE The use of cranes for lifting of persons can be subject to specific national regulations.

This document is not applicable to loader cranes manufactured before the publication of this document. For loader cranes designed before the publication of this document, the provisions concerning stress calculations in the version of EN 12999 that was valid at the time of their design, are still applicable.

2 Normative references

A1) 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 edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE In the event of conflicting statements between referenced documents and this document, the statements in this document apply.

EN 1677-2:2000+A1:2008, *Components for slings — Safety — Part 2: Forged steel lifting hooks with latch, Grade 8*

EN 12077-2:1998+A1:2008, *Cranes safety — Requirements for health and safety — Part 2: Limiting and indicating devices*

EN 14492-2:2019, *Cranes — Power driven winches and hoists — Part 2: Power driven hoists*

EN 12644-1:2001+A1:2008, *Cranes — Information for use and testing — Part 1: Instructions*

EN 13001-1:2015, *Cranes — General design — Part 1: General principles and requirements*

EN 13001-2:2021, *Crane safety — General design — Part 2: Load actions*

EN 13001-3-1:2012+A2:2018, *Cranes — General Design — Part 3-1: Limit States and proof competence of steel structure*

- EN 13001-3-2:2014, *Cranes — General design — Part 3-2: Limit states and proof of competence of wire ropes in reeving systems*
- EN 13001-3-5:2016+A1:2021, *Cranes — General design — Part 3-5: Limit states and proof of competence of forged and cast hooks*
- EN 13001-3-6:2018+A1:2021, *Cranes — General design — Part 3-6: Limit states and proof of competence of machinery — Hydraulic cylinders*
- EN 13135:2013+A1:2018, *Cranes — Safety — Design — Requirements for equipment*
- EN 13557:2003+A2:2008, *Cranes — Controls and control stations*
- EN 13586:2020, *Cranes — Access*
- EN 14033-2:2017, *Railway applications — Track — Railbound construction and maintenance machines — Part 2: Technical requirements for travelling and working*
- EN IEC 61000-6-2:2019, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2:2016)*
- EN IEC 61000-6-4:2019, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4:2018)*
- EN 60204-32:2008, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:2008)*
- EN 62745:2017, *Safety of machinery — Requirements for cableless control systems of machinery*
- EN ISO 898-1:2013, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread (ISO 898-1:2013)*
- EN ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*
- EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*
- EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*
- EN ISO 5353:1998, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point (ISO 5353:1995)*
- EN ISO 6892-1:2019, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2019)*
- EN ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*
- EN ISO 11688-1:2009, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2023)*

EN ISO 13849-2:2012, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2:2012)*

EN ISO 13854:2019, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*

EN ISO 13857:2019, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 20607:2019, *Safety of machinery — Instruction handbook — General drafting principles (ISO 20607:2019)* ^{A1}

3 Terms, definitions, illustration of parts and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.

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

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

3.1.1 Loader crane

3.1.1.1

loader crane

power driven crane comprising a column, which slews about a base, and a boom system which is attached on to the top of the column and being designed for loading and unloading vehicles

Note 1 to entry: Annex A gives examples of configuration and mountings.

3.1.1.2

self-powered loader crane

loader crane that has power source and hydraulic pump as integral parts of the machine

3.1.1.3

timber handling crane

loader crane specifically designed, manufactured and equipped with a grapple for loading/unloading of unprepared timber (e.g. tree trunks, branches)

3.1.1.4

separate loader

vehicle, with no load carrying capacity, equipped with a loader crane and designed to load or unload other vehicles and trailers