

**Kraanad. Pöördnoolkraanad**

**Cranes - Slewing jib cranes**

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## EESTI STANDARDI EESSÕNA

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ICS 53.020.20

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English Version

## Cranes - Slewing jib cranes

Appareils de levage à charge suspendue - Grues à flèche  
pivotante

Krane - Ausleger-Drehkrane

This European Standard was approved by CEN on 9 December 2011.

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## Foreword

This document (EN 14985:2012) has been prepared by Technical Committee CEN/TC 147 "Cranes - Safety", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by August 2012, and conflicting national standards shall be withdrawn at the latest by August 2012.

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

This document supersedes EN 14985:2007.

This document 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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This revision does not contain any fundamental changes. However, a number of clauses have been redrafted for reasons of clarity and technical and editorial accuracy.

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, Croatia, 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, Turkey and the United Kingdom.

## Introduction

This European Standard has been prepared to be a harmonised standard to provide one means for slewing jib cranes to conform with the essential health and safety requirements of the Machinery Directive, as mentioned in Annex ZA.

This European Standard is a type C standard as stated in EN ISO 12100:2010.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this European Standard.

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

## 1 Scope

This European Standard applies to electrically or hydraulically powered slewing jib cranes mounted in one position or free to travel on horizontal rails. It does not apply to wall mounted, pillar, derrick, railway, tower or workshop jib cranes. This European Standard is not applicable to erection, dismantling operations, or changing the configuration of the crane.

This European Standard gives requirements for all significant hazards, hazardous situations and events relevant to slewing jib cranes, when used as intended and under conditions foreseen by the manufacturer (see Clause 4).

The specific hazards due to potentially explosive atmospheres, ionising radiation, and operation in electromagnetic fields beyond the range of EN 61000-6-2 are not covered by this European Standard.

This European Standard does not include requirements for the lifting of persons.

This European Standard is applicable to slewing jib cranes, which are manufactured after the date of approval by CEN of this European Standard.

## 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.

EN 547-1, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 547-2, *Safety of machinery — Human body measurements — Part 2: Principles for determining the dimensions required for access openings*

EN 894-1, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

EN 894-2, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN 953, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

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

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

EN 12644-2, *Cranes — Information for use and testing — Part 2: Marking*

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

EN 13001-2:2011, *Crane safety — General design — Part 2: Load actions*

CEN/TS 13001-3-1, *Cranes — General design — Part 3-1: Limit states and proof of competence of steel structures*

CEN/TS 13001-3-2, *Cranes — General design — Part 3-2: Limit states and proof of competence of wire ropes in reeving systems*



- EN 13135-1, *Cranes — Equipment — Part 1: Electrotechnical equipment*
- EN 13135-2, *Cranes — Equipment — Part 2: Non-electrotechnical equipment*
- EN 13155, *Cranes — Safety — Non-fixed load lifting attachments*
- EN 13557:2003+A2:2008, *Cranes — Controls and control stations*
- EN 13586, *Cranes — Access*
- EN 60204-11, *Safety of machinery — Electrical equipment of machines — Part 11: Requirements for HV equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV (IEC 60204-11)*
- EN 60204-32:2008, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:2008)*
- EN 60825-1, *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825-1)*
- EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871)*
- EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1)*
- 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, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1)*
- EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*
- EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)*
- EN ISO 13849-1:2008, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)*
- EN ISO 13857, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857)*
- ISO 3864 (all parts), *Graphical symbols — Safety colours and safety signs*
- ISO 6336-1, *Calculation of load capacity of spur and helical gears — Part 1: Basic principles, introduction and general influence factors*
- ISO 6336-2, *Calculation of load capacity of spur and helical gears — Part 2: Calculation of surface durability (pitting)*
- ISO 7752-4, *Cranes — Controls — Layout and characteristics — Part 4: Jib cranes*
- ISO 8566-4, *Cranes — Cabins — Part 4: Jib cranes*
- ISO 9374-4, *Cranes — Information to be provided — Part 4: Jib cranes*
- ISO 12210-4, *Cranes — Anchoring devices for in-service and out-of-service conditions — Part 4: Jib cranes*

ISO 12488-4, *Cranes — Tolerances for wheels and travel and traversing tracks — Part 4: Jib cranes*

FEM 1.001:1998, booklets 9 and 10, *Rules for the design of hoisting appliances*

### 3 Terms and definitions

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

#### 3.1 rated capacity

$m_{RC}$

maximum net load (the sum of the payload and non-fixed load-lifting attachment) that the crane is designed to lift for a given crane configuration and load location during normal operation

#### 3.2 hoist load

$m_H$

sum of the masses of the load equal to the rated capacity, the fixed lifting attachment and the hoist medium

#### 3.3 slewing jib crane

power operated crane designed for permanent installation, mounted in either a fixed position or free to travel on horizontal rails, equipped with a jib which is able to rotate around a vertical axis

#### 3.4 direct acting lifting force limiter

device that limits the force on the system to a specified level

#### 3.5 indirect acting force limiter

device that measures the force on the system and activates a second device to stop the motion

### 4 List of hazards

Table 1 contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this European Standard, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.