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## Cranes — Vocabulary —

### Part 3: Tower cranes

*Appareils de levage à charge suspendue — Vocabulaire —*

*Partie 3: Grues à tour*

[Revision of third edition (ISO 4306-3:2003) and ISO 4306-3:2003/Amd.1:2011]

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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.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 4306-3 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 7, *Tower cranes*.

This fourth edition cancels and replaces the third edition (ISO 4306-3:2003, ISO 4306-3/A1:2011), which has been technically revised.

ISO 4306 consists of the following parts, under the general title *Cranes — Vocabulary*:

- *Part 1: General*
- *Part 2: Mobile cranes*
- *Part 3: Tower cranes*
- *Part 5: Bridge and gantry cranes*

# Cranes — Vocabulary — Part 3: Tower cranes

## 1 Scope

ISO 4306 establishes definitions in English, French and Russian for the most commonly used terms in the field of cranes.

This part of ISO 4306 gives the general definition of a tower crane and illustrates the terminology used with each type of tower crane by the use of figures with referenced term numbers.

It is applicable to:

- tower cranes that can be assembled and dismantled (by element or self-erecting cranes),
- permanently erected tower cranes, and
- mobile self-erecting tower cranes.

It is not applicable to:

- mobile cranes, or
- erection masts, with or without jibs.

## 2 Terms and definitions

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

### 2.1

#### **tower crane**

power-driven slewing jib type crane with the jib located at the top of a tower, which stays approximately vertical in the working position

Note 1 to entry: A tower crane is equipped with means for raising and lowering suspended loads and for the movement of such loads by changing the load-lifting radius, travelling of the load, slewing or travelling of the complete appliance. Some tower cranes perform several, but not necessarily all of these movements.

#### 2.1.1

##### **tower crane erected from parts**

tower crane which is transported to site in parts and erected with use of a separate lifting appliance where the design of the crane allows the crane to remain in the erected position in out-of-service conditions and to be dismantled for movement to another site

#### 2.1.2

##### **self-erecting tower crane**

tower crane which is transported to site and mostly erected without use of a separate lifting appliance, where the design of the crane allows the crane to remain in the erected position in out-of-service conditions and to be lowered for movement to another site

### 2.1.3

#### mobile self-erecting tower crane

tower crane as defined in 2.1.2 mounted on a self-propelled chassis

## 3 Types of tower crane

The following four groups of characteristics describe tower cranes:

a) Assembly

- assembled from component parts;
- self-erecting (rapid erection without use of an auxiliary appliance).

b) Slewing level

- high-level slewing;
- low-level slewing.

c) Type of jib (boom)

- horizontal jib (also hammerhead type);
- luffing jib (boom);
- gooseneck jib;
- extending jib;
- jack-knife boom.

d) Movement

- travelling;
- stationary (fixed);
- climbing.

## 4 Nomenclature

A selection of different types of tower crane is shown in Table 1, which refers to the appropriate figure.

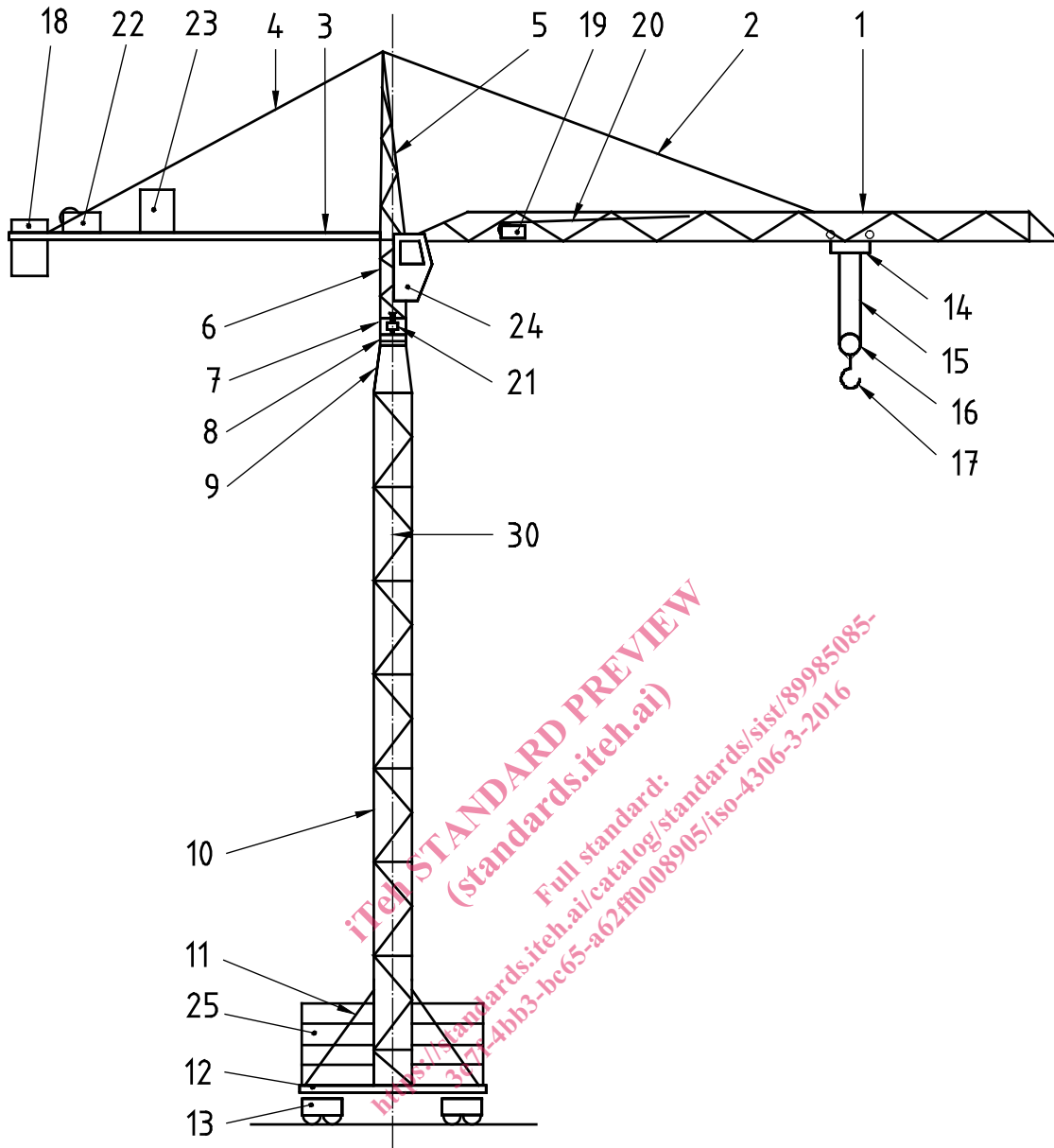
The figures illustrate the terms, for which the definitions are self-evident. The terms are identified by their reference numbers.

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Table 1 — Types of tower crane

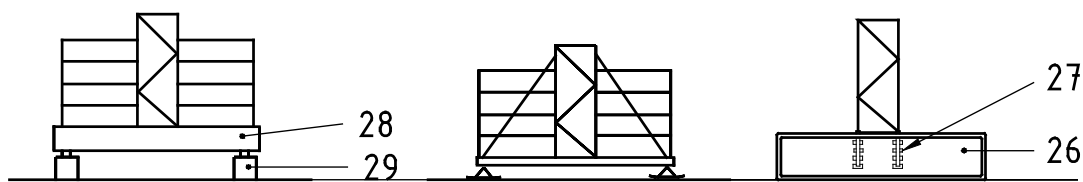
Characteristic	High-level slewing tower cranes	Low-level slewing tower cranes
Horizontal jib	Figure 1	Figure 3, Figure 6
Luffing jib or boom	Figure 2	
Gooseneck jib	Figure 4	
Extending jib	Figure 5	
Jack-knife boom	Figure 7	
Cranes assembled from component parts	Figure 1, Figure 2, Figure 4, Figure 5, Figure 7	
Self-erecting tower cranes (rapid erection)		Figure 3, Figure 6
Mobile self-erecting tower cranes		Figure 8
Travelling	Figure 1 a)	Figure 3 a)
Stationary	Figure 1 b)	Figure 3 b)
Climbing element hoisted inside the structure	Figure 2 b)	
Climbing section hoisted outside the structure	Figure 2 c)	

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a)



b)

- a) Stationary
- b) Travelling



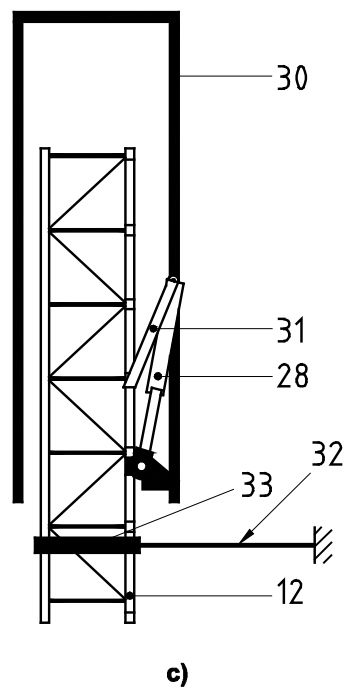
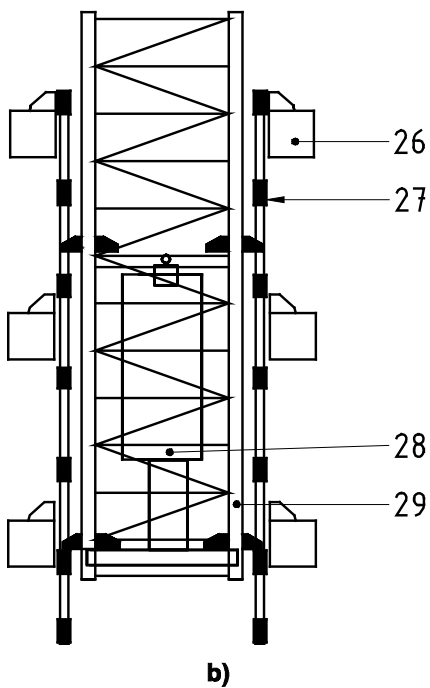
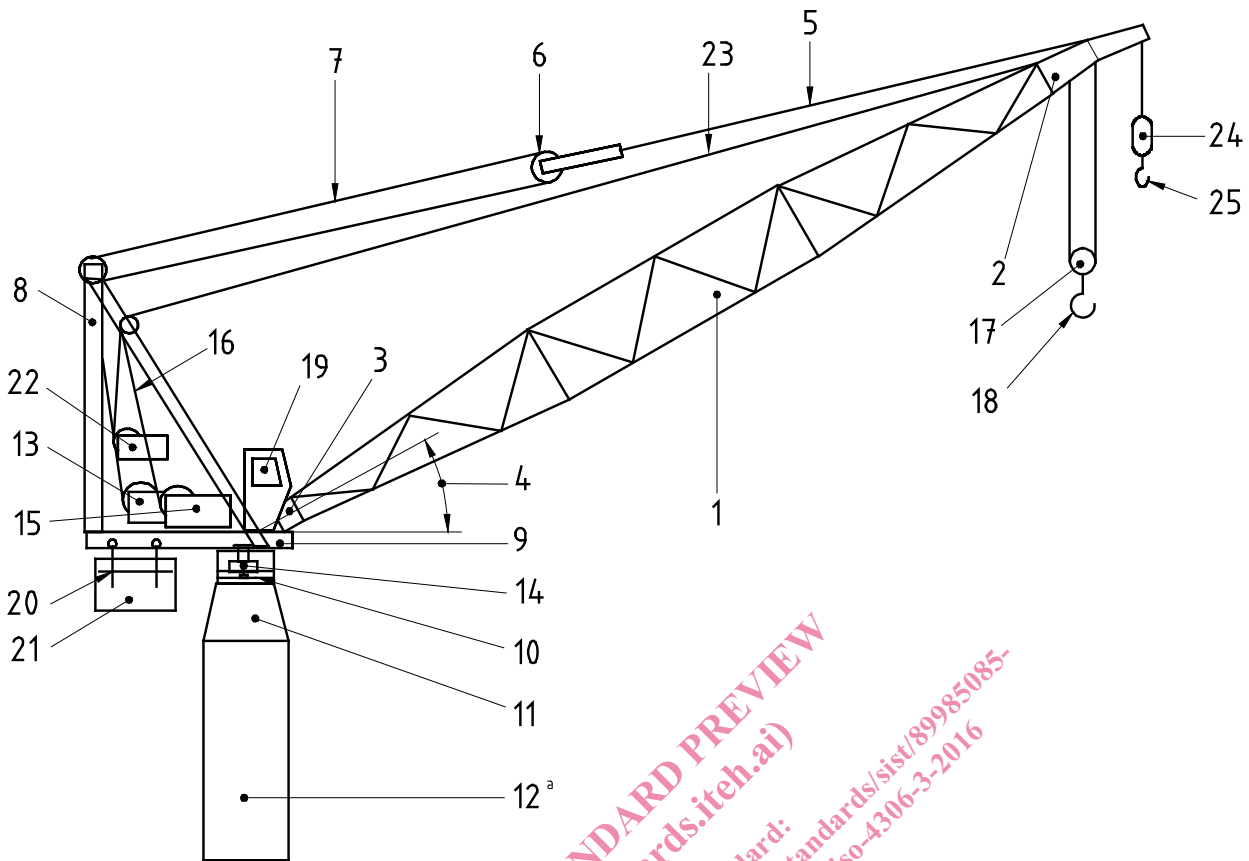
**Key**

- 1 Jib
- 2 Jib tie
- 3 Counter-jib
- 4 Counter-jib tie
- 5 Cat head
- 6 Cab mast
- 7 Slewing platform
- 8 Slewing ring
- 9 Slewing ring support
- 10 Tower
- 11 Tower strut
- 12 Undercarriage
- 13 Bogie
- 14 Trolley
- 15 Hoisting rope
- 16 Block assembly
- 17 Hook
- 18 Counterweight
- 19 Trolley travelling mechanism
- 20 Trolley travelling rope
- 21 Slewing mechanism
- 22 Hoisting winch
- 23 Electrical control cabinet
- 24 Cab
- 25 Base ballast
- 26 Foundation
- 27 Foundation anchor
- 28 Base frame
- 29 Footing blocks
- 30 Slewing axis

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**Figure 1 — Tower crane assembled from component parts, high-level slewing with horizontal jib**



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- a) Luffing jib
- b) Climbing element hoisted inside the structure
- c) Climbing section hoisted outside the structure