
**Cranes — Information to be provided
for enquiries, orders, offers and
supply —**

**Part 3:
Tower cranes**

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*Appareils de levage à charge suspendue — Informations à fournir
pour la recherche, la commande, la soumission et la fourniture —
Partie 3: Grues à tour*

ISO 9374-3:2014

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

The committee responsible for this document is ISO/TC 96, *Cranes*, Subcommittee SC 7, *Tower cranes*.

This second edition cancels and replaces the first edition (ISO 9374-3:2002), which has been technically revised.

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ISO 9374 consists of the following parts, under the general title *Cranes — Information to be provided for enquiries, orders, offers and supply*:

- Part 1: *General*
- Part 3: *Tower cranes*
- Part 4: *Jib cranes*
- Part 5: *Overhead travelling cranes and portal bridge cranes*

Cranes — Information to be provided for enquiries, orders, offers and supply —

Part 3: Tower cranes

1 Scope

This part of ISO 9374 gives guidance for information to be provided:

- a) by the purchaser when enquiring for a tower crane,
- b) by the purchaser when ordering a tower crane,
- c) by a manufacturer when offering (tendering) for a tower crane,
- d) by the manufacturer when supplying a tower crane.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 4306-3:2003 (including Amd.1:2011), *Cranes — Vocabulary — Part 3: Tower cranes*

ISO 7363:1986, *Cranes and lifting appliances — Technical characteristics and acceptance documents*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4306-3:2003 and ISO 4306-3:2003/Amd.1:2011 apply.

4 Information to be provided by the purchaser with enquiry or order

The purchaser shall provide the necessary data to enable the crane manufacturer/supplier to supply a tower crane equipped to meet the purchaser's specifications. A typical list of data is given in [Annex A](#).

[Figures 1](#) and [3](#) illustrate the dimensions to be supplied, as applicable, by the purchaser.

NOTE The format of the data presented in [Annex A](#) is shown as an example only.

5 Information to be provided by the manufacturer

5.1 Information to be provided when offering a tower crane

The manufacturer/supplier shall provide the information, as applicable, listed in [Annex B](#).

NOTE The format of the data presented in [Annex B](#) is shown as an example only.

5.2 Information to be provided when supplying a tower crane

5.2.1 Technical information

5.2.1.1 Site preparation and crane support design data

Data to be used by the crane support designers should be provided, as listed below.

- a) Vertical and horizontal forces and torsional and overturning moments applicable to the crane configuration(s) furnished. This data should indicate whether governing forces are due to in-service or out-of-service winds, and the applicable speed and direction of wind. For travelling cranes the data can be stated in terms of wheel or bogie loads.
- b) Maximum wind speed for which the travelling crane possesses adequate resistance to sliding, as determined by calculation, in the configuration(s) provided, and precautions that shall be taken at higher wind speeds than in-service speed.
- c) Rail track installation requirements.
- d) Anchorage arrangements for cranes to be installed on stationary (fixed) bases.
- e) Ballast requirements, as applicable.

5.2.1.2 Erection instructions

Data to be used by crane erection personnel should be provided, such as the following:

- a) mass and dimensions of components and sub-assemblies;
- b) recommended lifting attachment points, when applicable;
- c) centre of gravity location for non-uniform components and sub-assemblies, if handled in normal sequence of erection/dismantling;
- d) method and recommended sequence of assembly — where applicable, warnings should be given to alert erection personnel when member strength or stability requires a particular method or sequence of erection;
- e) details of critical component connections, including diagrams where necessary, describing and identifying:
 - 1) bolts, pins and other parts needed,
 - 2) the method of assembling the joint,
 - 3) the torque or tension to be applied to prestressed bolts,
 - 4) the point in time during the erection process for applying final torque or tension,
 - 5) the means for retaining components such as pins.

5.2.1.3 Installation, testing and use

The manufacturer shall provide technical information such as listed in [Annex B](#) and test certificates for the crane to facilitate its erection, testing and use in accordance with ISO 7363 and as appropriate for the appliance.

5.2.1.4 Operating instructions, limitations and precautions

Information, data and recommendations should be provided for the use of the crane operator and supervisory personnel, which, in the judgement of the manufacturer, would foster operation of the crane within the requirements of the design and would reduce the possibility of mishap or damage.

5.2.1.5 Maintenance requirements and recommendations

This information should include identification of those members or locations it is advisable to periodically observe or test by non-destructive means for the purpose of detecting the onset of metal fatigue, the loosening of prestressed bolts, or wear affecting the ability of the crane to support rated loads.

5.2.1.6 Design characteristics affecting competent use of the crane

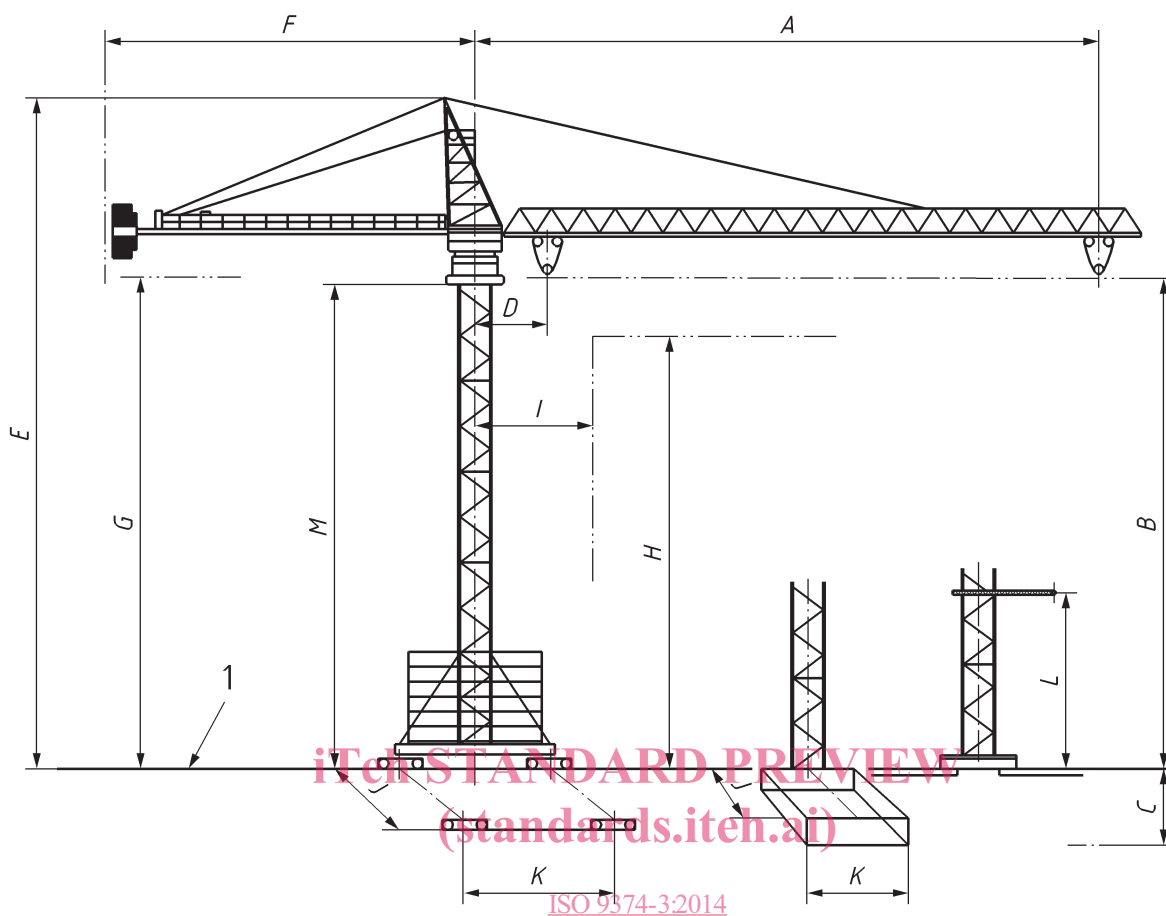
In addition to the information called for in [5.2.1.2](#), data such as those listed below should be provided:

- a) location, proper settings and adjustments, and functioning of limiting and indicating devices;
- b) location and required settings of hydraulic or pneumatic pressure-relief valves and locations of points where circuit pressures can be checked;
- c) the manufacturer's recommendations for frequency of inspection as a function of the severity of service.

5.2.2 Dimensions

The manufacturer shall provide dimensional data appropriate to the configuration(s) of the crane furnished, such as those dimensions shown in [Figures 2, 4, 5, 6 and 7](#).

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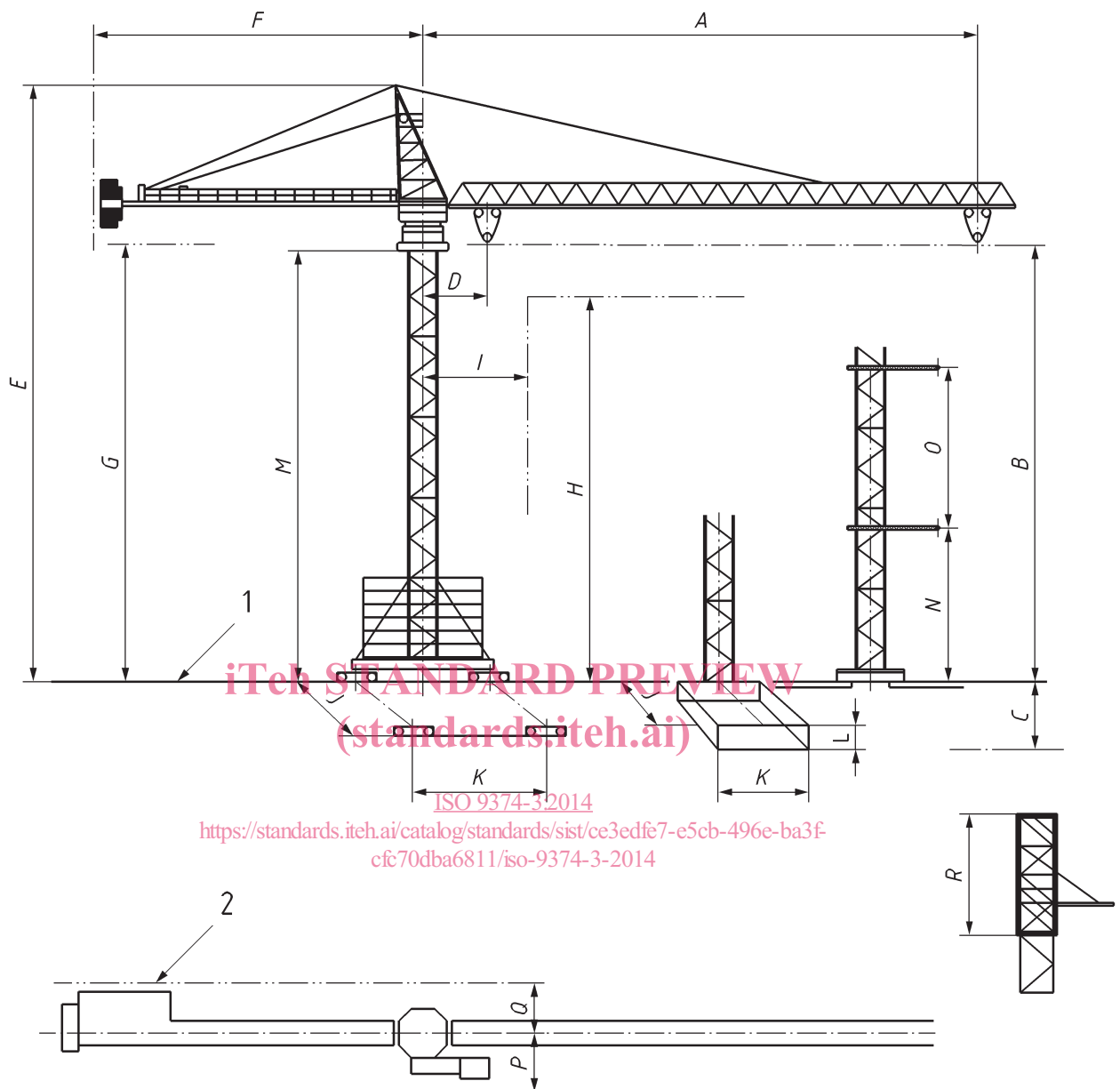


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Key

- | | | | |
|---|---|---|--|
| 1 | datum | G | clearance under tail swing |
| A | maximum radius | H | maximum height of the obstruction |
| B | maximum hook height above the datum | I | minimum distance to the obstruction |
| C | maximum hook movement below the datum | J | track rail gauge, or foundation width |
| D | minimum radius | K | track rail wheelbase, or foundation length |
| E | maximum height to the top of the cat head | L | maximum free-standing height of tower |
| F | tail radius | M | distance to the first tie |

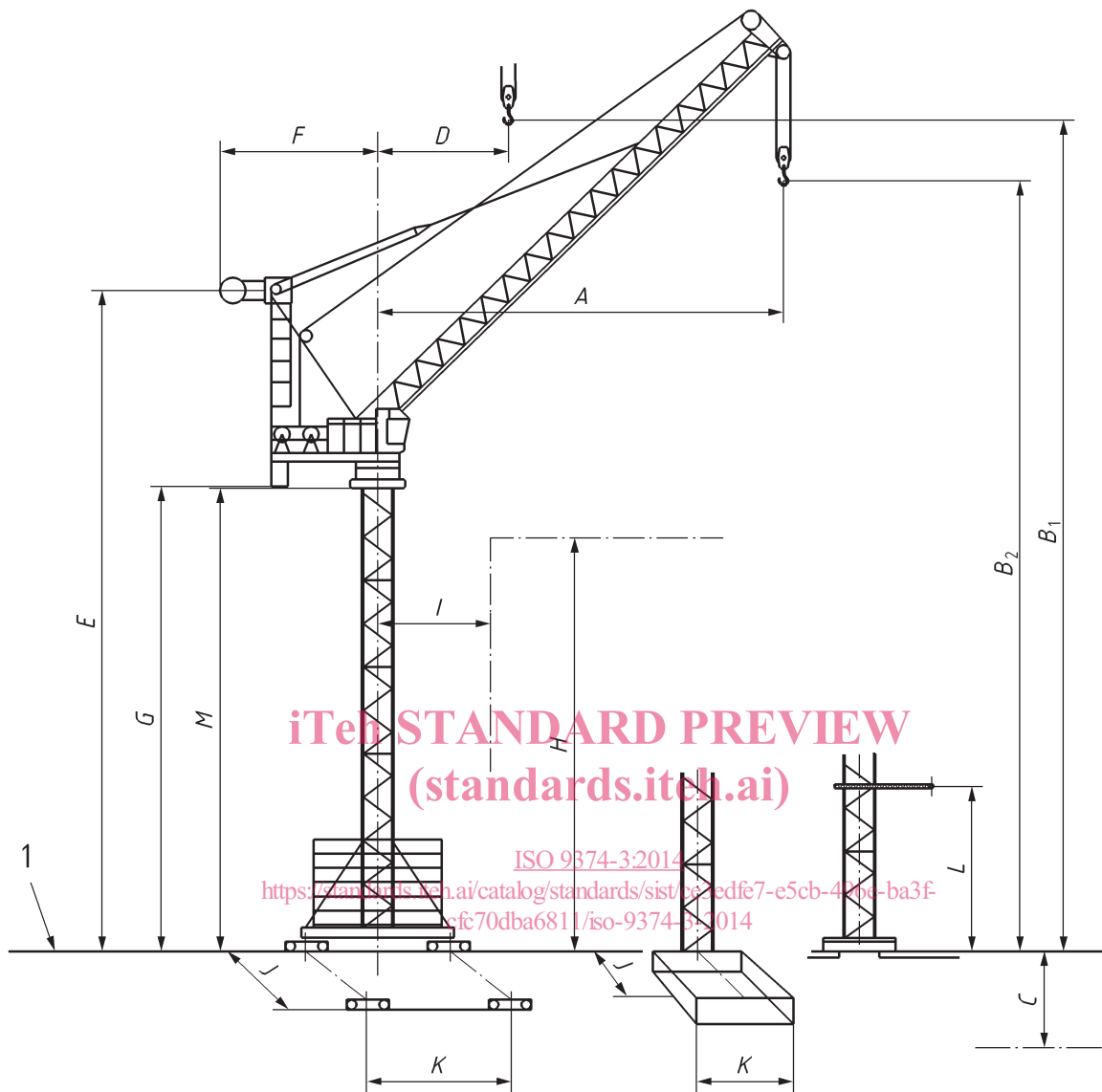
Figure 1 — Tower cranes erected by element — Examples of dimensions to be provided by the purchaser, as applicable



Key

- | | |
|--|---|
| 1 datum | <i>I</i> minimum distance to the obstruction |
| 2 building line | <i>J</i> track rail gauge, or foundation width |
| <i>A</i> maximum radius | <i>K</i> track rail wheelbase, or foundation length |
| <i>B</i> maximum hook height above the datum | <i>L</i> depth of foundation |
| <i>C</i> maximum hook movement below the datum | <i>M</i> maximum free-standing height of tower |
| <i>D</i> minimum radius | <i>N</i> distance to the first tie |
| <i>E</i> maximum height to the top of the cat head | <i>O</i> distance between the ties |
| <i>F</i> tail radius | <i>P</i> minimum clearance, cab side |
| <i>G</i> clearance under tail swing | <i>Q</i> minimum clearance, other side |
| <i>H</i> maximum height of the obstruction | <i>R</i> height of climbing frame |

Figure 2 — Tower cranes erected by element — Examples of dimensions to be provided by the manufacturer, as applicable



Key

- | | | | |
|----------------|---|---|--|
| 1 | datum | G | clearance under tail swing |
| A | maximum radius | H | maximum height of the obstruction |
| B ₁ | maximum hook height above the datum | I | minimum distance to the obstruction |
| B ₂ | maximum hook height above the datum | J | track rail gauge, or foundation width |
| C | maximum hook height below the datum | K | track rail wheelbase, or foundation length |
| D | minimum radius | L | distance to the first tie |
| E | maximum height to the top of the cat head | M | maximum free-standing height of tower |
| F | tail radius | | |

Figure 3 — Tower cranes with luffing jib — Examples of dimensions to be provided by the purchaser, as applicable

