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Cranes - Classification - Part 1: General

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

GB/T 20863 Cranes - Classification, together with GB/T 3811 Design Rules for Cranes,
GB/T

22437 Cranes - Design Principles for Loads and Load Combinations, GB/T 30024 Cranes -

Proof of Competence of Steel Structures, GB/T 30561 Cranes - Stiffness - Bridge and
Gantry

Cranes, etc. jointly constitute the basic national standard system for supporting crane
design

calculations.

This Document is Part 1 of GB/T 20863 Cranes - Classification. GB/T 20863 consists of the
following parts:

- Part 1: General;
- Part 2: Mobile Cranes;
- Part 3: Tower Cranes;
- Part 4: Jib Cranes;
- Part 5: Overhead Travelling and Portal Bridge Cranes.

This Part replaced GB/T 20863.1-2007 Cranes - Classification - Part 1: General. Compared
with GB/T 20863.1-2007, the major technical changes of this Part are as follows besides
the

structural adjustments and editorial modifications:

- Modify the scope, that is, add the classification method of average displacement (see
Clause 1 of this Edition; Clause 1 of the 2007 Edition);
- Add normative references (see Clause 2 of this Edition);
- Add terms and definitions (see Clause 3 of this Edition);
- Add symbols (see Clause 4 of this Edition);
- Modify the content of classification purposes (see Clause 5 of this Edition; Clause 2 of
the 2007 Edition);
- Increase the relevant content of the average displacement classification of the whole
crane (see 6.1 and 6.5 of this Edition);

--- Increase the range of the maximum number of working cycles with the crane service level U9 (see 6.2 of this Edition);

--- Modify the nominal value of the load spectrum coefficient of the crane and the corresponding load state level, that is, the nominal value of the load spectrum coefficient has been increased by 0.0313 and 0.0625, changing from 4 values to 6 values; the load state level is from Q1 to Q4 in total 4 levels are changed into 6 levels of QP0~QP5 (see

6.3 of this Edition; 3.2 of the 2007 Edition);

--- Modify the crane classification, from 8 levels A1~A8 to 15 levels A03~A11 (see 6.4 of this Edition; 3.3 of the 2007 Edition);

--- Delete the agency work level in the original document (see Clause 4 of the 2007 Edition);

--- Increased crane parts work level (see Clause 7 of this Edition).

This Document uses translation method to equivalently adopt ISO 4301-1:2016 Cranes - Classification - Part 1: General.

The Chinese documents that have consistent correspondence with the international documents

cited in this document are as follows:

--- GB/T 6974.1-2008 Cranes - Vocabulary - Part 1: General (ISO 4306-1:2007, IDT);

--- GB/T 6974.2-2017 Cranes - Vocabulary - Part 2: Mobile cranes (ISO 4306-2:2012, IDT);

--- GB/T 6974.3-2008 Crane - Vocabulary - Part 3: Tower crane (ISO 4306-3:2003, IDT);

--- GB/T 6974.5-2008 Cranes - Vocabulary - Part 5: Bridge and gantry cranes (ISO 4306-5:2005, IDT).

This Document made the following editorial modifications:

--- The average angular displacement in Table 7 has a proportional relationship. There is an error in "11.75" in the original text, and it is revised to "11.25";

--- Considering that Annex B is not mentioned in the main text; the content "See Annex B for the conversion guidance of the agency work level" is added to 7.4;

--- 6.4 "Work level of the whole machine" quoted in 7.5 "average displacement" of the original text is inconsistent with the actual content of this Clause; and is revised to quote

6.5 "average displacement";

--- The international documents in the Bibliography are replaced by Chinese documents with

the same degree of consistency; and according to the citations in Annex B, GB/T

20863.1-2007 Cranes - Classification - Part 1: General is added.

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not assume the responsibility to identify these patents.

This Document was proposed by China Machinery Industry Federation.

Cranes - Classification - Part 1: General

1 Scope

This Document establishes a general classification of cranes and mechanisms based on the

service conditions, mainly expressed by the following parameters:

- the total number of working cycles to be carried out during the specified design life of the crane;
- the load spectrum factor which represents the relative frequencies of loads to be handled;
- the average displacements.

This Document is applicable to the cranes defined in ISO 4306.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

ISO 4306 (all parts) Cranes - Vocabulary

3 Terms and Definitions