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(JCA/JSA)

**Cranes — Maintenance — Part 1 :
General**

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Health, Labour and Welfare and the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by Japan Crane Association (JCA) /Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

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JIS B 8837 consists of the following 5 parts under the general title "*Cranes—Maintenance*":

Part 1 : General

Part 2 : Mobile cranes (to be established)

Part 3 : Tower cranes (to be established)

Part 4 : Jib cranes (to be established)

Part 5 : Overhead travelling cranes and portal bridge cranes (to be established)

Cranes—Maintenance—Part 1 : General

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 23815-1** published in 2007 without any modification of the technical contents for the corresponding parts, while adding **JIS** original specification on matters related to long-term maintenance of cranes which is not given in the said International Standard.

The portions with continuous sidelines and dotted underlines, and Annex JA and Annex JB are the matters not given in the corresponding International Standard. A list of modifications with explanations is given in Annex JC.

1 Scope

This Standard specifies the general requirements for maintaining the cranes defined in **JIS B 0146-1** for owners or users to attain the total design work cycle of the crane or operation beyond this cycle.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows :

ISO 23815-1 : 2007 *Cranes—Maintenance—Part 1 : General* (MOD)

The symbols which denote the degree of correspondence in the contents between **JIS** and the corresponding International Standard are **IDT** (identical), **MOD** (modified) and **NEQ** (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 0146-1 *Cranes—Vocabulary—Part 1 : General*

NOTE : Corresponding International Standard : **ISO 4306-1** *Cranes—Vocabulary—Part 1 : General* (MOD)

JIS B 8836 *Cranes—Wire ropes—Care, maintenance, installation, examination and discard*

NOTE : Corresponding International Standard : **ISO 4309** *Cranes—Wire ropes—Care, maintenance, installation and discard* (MOD)

3 Terms and definitions

For the purpose of this Standard, the terms and definitions in **JIS B 0146-1** and the following apply.

3.1 maintenance

set of activities intended to keep a crane in, or to restore it to, a state in which it can perform its required function

NOTE : Maintenance includes monitoring, test and measurement, replacement, adjustment, repair, and in some cases, administrative action.

3.2 planned maintenance

maintenance carried out in accordance with an established time schedule, and performed according to prescribed criteria, in order to reduce the probability of failure or the degradation of the functioning of a crane

NOTE : The time schedule is set according to the elapsed time, the operating time, or the number of uses.

3.3 unplanned maintenance

maintenance carried out after occurrence of a failure, or detection of a fault, in order to restore a functional crane to a state in which it can perform a required function

3.4 maintenance programme

programme designed to maintain the crane in a safe operational condition

3.5 responsible person

maintenance person appointed by a crane user or owner from those designated as maintenance personnel

3.6 manufacturer

those who design and manufacture cranes, etc. (including mobile cranes) based on the respective structural standards

4 Maintenance

4.1 Maintenance programme

4.1.1 General

A maintenance programme shall be established in accordance with the manufacturer's instructions. In the absence of manufacturer's instructions, the maintenance programme shall be established by a responsible person. Signed and dated maintenance records of checks, inspections and maintenance works, should be placed on file.

NOTE 1 In the International Standard corresponding to this Standard, in the corresponding sub-clause, **ISO 12478-1** is cited for reference.

NOTE 2 Although the legal preservation term for the self-imposed inspection and the check record is three years, the record of the operating time and load status of cranes, etc. and the record used for controlling the fatigue life of cranes such as the exchange history of main parts and the repair history of damage of welded joints of main girders are preserved until cranes are abolished.

4.1.2 Maintenance personnel

4.1.2.1 Duties of maintenance personnel

The maintenance personnel shall be responsible for maintaining the crane and for its safe and satisfactory operation. They shall carry out all necessary maintenance in accordance with the manufacturer's maintenance manual and within the safe system of work.

4.1.2.2 Minimum requirements

The maintenance personnel shall be :

- a) competent (sufficiently experienced, and qualified) ;
- b) fully conversant with the machinery they are required to maintain and its hazards ;
- c) properly instructed and trained, including their attendance at appropriate courses where special equipment is used ;
- d) with the driver's license, required even under maintenance, the skill training course completion certificate or the special educational completion certificate, when a crane needs to be operated for adjustment, trial operation, etc., and
- e) familiar with work procedures and cautionary instructions regarding safety.

4.2 Planned maintenance

The planned maintenance shall be as follows :

- a) To ensure safe and satisfactory operation of the crane, a properly planned maintenance system shall be established and used.
- b) Manufacturer's instruction books recommend that specific tasks be carried out at stated intervals, and that these periods should not be exceeded.
- c) They also specify the lubrication points that require attention, the interval or frequency of greasing and oil changes, and the grades and quality of lubricants to be used.
- d) The instruction books also cover other essential maintenance such as replacement of filters, recommended tyre pressure, frequency of checking the security of fixing bolts and recommended torque settings, as well as other adjustments such as of clutch and brakes.
- e) An effective planned maintenance system should recognize the possible need to prohibit use of the crane until essential maintenance work can be carried out.

4.3 Inspection-based maintenance

According to the result of daily inspection, frequent inspection (weekly, monthly), periodic inspection (quarterly, yearly), thorough inspection and other inspections (condition monitoring, out of service, accident occurrence, repair, earthquake), those items that it is determined are necessary to adjust or repair, or when the exchange of parts is considered necessary, shall be included in the maintenance programme.

4.4 Safety precautions

4.4.1 General

Only appropriately authorized maintenance personnel who completed a special education programme on electricity shall be permitted to work on energized equipment.