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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Safety code for launching machine

架桥机安全规程

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Table of Contents

1 Scope	
2 Normative references	
3 Metal structure	
3.1 General	
3.3.9 Level	
3.7.1 LADDER	
3.7.2 Ladders	
3.9 Repair and scrap metal structures	
4.2 Rope	
4.3 Reel	
4.4 Pulley	
4.5 Brakes	
5 Hydraulic System	8
18 Inspection and maintenance	14 19 15 bridge safety assessment using the state machine

Foreword

This standard 3.1,3.2,3.3.3,3.3.5,3.3.6,3.3.7,3.3.8,3.3.9,3.3.10,3.4,3.9,4.1,4.2,4.3,4.4, 4.5.1,4.5.2,4.5.3,4.5.5,4.5.6,4.5.7,4.7,4.8,5.1,5.4,5.5,5.7,6.1,6.3.2,6.3.3,6.3.4, 6.4.5, 6.4.6,6.4.7,6.5.1,6.5.2,6.5.3,6.5.4,6.5.5,6.5.6,6.5.7,6.5.8,6.7,7.1,7.2,7.3,7.4, 7.5 7.6.1,7.6.2,7.7,10.3, Chapter 11, Chapter 12, Section 13, Chapter 14 and Chapter 15 are mandatory, others are recommended Provisions. This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Machinery Industry Federation. This standard by the National Standardization Technical Committee crane (SAC/TC227) centralized. This standard is drafted by: Country lifting the transport machinery for Quality Supervision and Inspection Center, Qinhuangdao Tianye Communications Heavy Industry Co., Ltd. Participated in the drafting of this standard. Beijing million bridge Industrial Machinery Co., Ltd., Zhengzhou generous new Heavy Industries Ltd., Shijiazhuang Railway Studies School of National Defense Transportation Institute, Zhengzhou City, central China Road and Bridge Equipment Co., Ltd., Zhengzhou rivers Heavy Industries Co., Ltd., Zhengzhou City, central China Construction Machinery Co., Ltd. Zhejiang Jian Bridge Equipment Co., Ltd., Nantong Liwei Machinery Co., Ltd. The main drafters of this standard. Taotian Hua, Wei Fuxiang, Wang Shunting, Liu Yabin, Chen Hao, Liu Jiawu, Songpeng Wei, yellow person, Ni Jianzhong, Songhai Jie, Ding Bang Jian,

Xie Jing. Erecting machine safety regulations

1 Scope

China's mandatory safety code for launching machines - the bridge girder erection machines that travel along a viaduct under construction and lift precast beams weighing hundreds of tonnes into place over live roads, rivers and railway lines, where a failure is not a defect but a collapse. It sets the safety requirements for the machine and for its use, covering the design and calculation of the load bearing structure, the mechanisms, the hydraulic and electrical systems and the safety devices, together with the requirements on erection and dismantling, operation, inspection and maintenance, testing, marking and instructions for use. A long list of clauses is expressly mandatory - among them the general safety provisions, the requirements on the load bearing structure and its welds, the mechanisms and their brakes, the electrical and control system, the safety devices, the erection and dismantling, the load tests, and the marking and instructions - while the remainder is recommended. The structural requirements draw on the crane design rules of GB/T 3811-2008, the welded joints on the radiographic examination of GB/T 3323 and the filler metal standards GB/T 5117, GB/T 5118, GB/T 5293 and GB/T 8110, the high strength bolted connections on the GB/T 1228 to GB/T 1231 series, the wire ropes on GB 8918 and GB/T 5972, the hooks on the GB/T 10051 series, the safety signs on GB 2893 and the load tests on GB/T 5905. Issued on 12 May 2011 and in force since 1 April 2012, it is a first edition.

This standard specifies the bridge machine design, manufacture, installation, use, maintenance, scrap, basic safety requirements of the inspection and other aspects. This standard applies to machines road bridge, railway bridge machine, this standard does not include a railway line running bridge machine flat car.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document. GB/T

27 Hex head articulation hole bolt A and Class B

GB/T 28 hex head screw hole articulation hole bolt A and B

GB/T 152.1 rivet fasteners through holes

GB/T 1228 high strength steel with large hexagon head bolts (ISO 7412)

GB/T 1229 steel with high strength large hexagon nuts (ISO 4775)

GB/T 1230 high-strength steel washers (ISO 7416)

GB/T 1231 Steel hexagon head bolts, hexagon nuts, plain washers for high-strength GB 2893 Safety colors (ISO 3864-1)

GB/T 3098.1 Mechanical properties of fasteners Bolts, screws and studs (ISO 898-1)

GB/T 3323 metal fusion welded joints radiography (EN1435)

GB/T 3632 Steel with torsional shear bolts connecting deputy

GB/T 3811-2008 crane design specifications

GB/T 4162-2008 wrought steel rod ultrasonic detection methods (ASTME2375.2004) GB/T 4842 Ar

GB/T 5117 carbon steel electrode (ANSI/AWSA5.1)

3.1 General

3.1.1 Metal bridge structure design, selection of materials should be reasonable, structure type and structural measures to meet the structural member in the transportation, installation and During use of strength, stability, rigidity and relevant safety requirements and to minimize the load to accommodate the construction of the bridge construction need. And should facilitate inspection, maintenance and drainage.

3.1.2 metal steel design document, should indicate the grade of steel, if necessary, should be marked on the mechanical properties of steel required by the chemical composition Points and other additional assurance project. Weld form should indicate the required size, grade of weld quality and construction requirements.

3.2 Material Bridge machine bearing structural members, steel selection should meet the requirements GB/T 3811-2008 in 5.3, and does not allow the use of the following Class B Steel.

3.3 pieces of metal structures welding requirements

3.3.1 metal structure fabrication and installation of metal structures units should develop welding procedures in accordance with the relevant standards or JGJ81.

3.3.2 manufacturing units and installation of the first unit of its type of steel used, welding materials, welding, joint type, welding position, weld Combined conditions heat treatment process and the welding parameters, heat or preheat process measures and other parameters should be carried out welding procedure qualification.

3.3.3 welding materials shall meet the following requirements.

a) manual welding electrodes shall comply with GB/T 5117 or GB/T 5118 regulations, gas shielded welding wire should be consistent with GB/T 8110 of Regulations, the grade should be chosen with the main mechanical properties of metals adaptation;

b) submerged arc welding, semi-automatic welding wire and flux shall comply with GB/T 5293 and GB/T 12470, and its grade selection And the mechanical properties of metal body should adapt; The use of carbon dioxide;

c) argon gas welding should comply with the provisions of GB/T 4842, which shall not be less than 99.95% purity Gas shall comply with HG/T 2537's.

3.3.4 metal structure full penetration butt weld fusion welding quality of welded joints according to JB/T 10559 in the weld rating for grading, sub The following three grades.

a) Level 1 refers to an important tension structure of welded joints, such as main beam, small frame tension zones;

b) Level 2 refers to the general tension structure of welded joints;

c) Level 3 refers to compression of the welded joint structure.

3.3.9 Level

1 Weld should have traceability after welding.

3.3.10 welds NDT NDT personnel should obtain the appropriate qualifications; staffing and issuing reports should hold the appropriate testing method The grade II or II level and above qualifications.

3.4 bolts connecting

3.4.1 The design, construction and acceptance of high strength bolt connections shall comply with the provisions of JGJ82.

3.4.2 member assembly joint use of friction-type high connectivity, high-strength bolts connecting member at the contact surfaces should be kept dry, clean, no Should flash, burrs, weld spatter, scars, iron oxide, dirt and the like.

3.4.3 member assembly joints using high strength bolt friction type connection, use a torque wrench to tighten, tighten and should reach the required clamping force Moment, the contact surface should be close fitting. Deputy connection Shi tightening sequences and early twist, re-tighten the torque should meet the design requirements. Torque wrench should be calibrated And a calibration records. High-strength bolts should be tightened construction records.

3.4.4 Non-shear type high strength bolts, nuts, washers, respectively, should be sized according to GB/T 1228, GB/T 1229 and GB/T 1230 regulations Given its technical conditions should be consistent with the provisions of GB/T 1231's. Using twisted deputy shear type high strength bolt connection should comply with GB/T 3632's.

3.4.5 articulation hole bolt hole size should respectively GB/T 27, GB/T 28 and GB/T 152.1 requirements, which should meet the technical conditions Co GB/T 3098.1 requirements.