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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 5031-2019

Tower cranes

塔式起重机

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Table of Contents

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 5031-2008 "Tower Crane". The main technical changes compared with GB/T 5031-2008 are as follows:

--- Added the terms "fixed tower crane", "climbing support device" and "replacement support device" (see 3.13, 3.14, 3.15);

--- Revised the model classification method and labeling principles (see 4.1, 4.2,.2008 and

--- Revised the technical requirements of "balance weight and weight" (see 5.2.1,

5.2.1.1 of.2008 edition);

--- Supplementary amendments to the requirements for "climbing devices" (see 5.2.3, 5.6.11);

--- Adjusted the requirements for "wire rope anti-off device" (see 5.6.10,

5.6.10 of.2008 edition);

--- Added "climbing device" test method (see 6.7);

--- Added the method of "inspection of the boom amplitude limiting device" (see Appendix D.6);

--- Removed the "reliability" requirements and test methods (see 5.2.5, 6.4, Appendix F of the.2008 edition);

--- Removed Appendix A and Appendix I, and changed to direct reference standards (see

5.3.1.2, 11.5.4, Appendix A, Appendix I of the.2008 edition). This standard was proposed by the China Machinery Industry Federation. This standard is under the jurisdiction of the National Crane Machinery Standardization Technical Committee (SAC/TC227). This standard is drafted by: Beijing Construction Mechanization Research Institute Co., Ltd. Participated in the drafting of this standard. Zhonglian Heavy Industry Co., Ltd., Shenyang Sanyo Construction Machinery Co., Ltd., Fushun Yongmao Construction Machinery Company, Xuzhou Construction Machinery Engineering Co., Ltd., Hubei Jianghan Construction Engineering Machinery Co., Ltd., Beijing Construction Machinery and Materials Quality Supervision Supervisory Inspection Station, Harbin Institute of Technology, Sichuan Construction Machinery (Group) Co., Ltd., Zhejiang Construction Machinery Group Co., Ltd., Jiangsu Zheng Xing Construction Machinery Co., Ltd., Guangxi Construction Engineering Group Construction Machinery Manufacturing Co., Ltd., Shandong Hongda Construction Engineering Group Co., Ltd., Shanghai Building Science Research Institute (Group) Co., Ltd., Zhejiang Huba Construction Machinery Co., Ltd., Harbin Dongjian Machinery Manufacturing Co., Ltd., Jiangyan Machine Electric Group Co., Ltd., Chengdu Jiuhe Construction Machinery Co., Ltd., Liaoning Provincial Safety Science Research Institute, Guangdong Academy of Building Science Group Co., Ltd., Beijing Zhenghe Engineering Equipment Service Co., Ltd., Shanghai Construction Engineering Research Institute Co., Ltd., Jiangxi Jiangte Motor Co., Ltd. Company, China Xinxing Construction and Development Co., Ltd., Beijing Chengjianwu Construction Group Co., Ltd., China Railway Construction Group Co., Ltd., Jiangxi Zhongzhong Tian Machinery Co., Ltd., Jiangxi Huawu Brake Co., Ltd., Beijing Jiangong Civil Engineering Co., Ltd., China Construction Education Association. The main drafters of this standard. Luo Wenlong, Yao Jinke, Yu Lekang, Li Guowei, Cai Bing, Mi Chenghong, Tian Guangfan, Wen Zhaohui, Wang Kaihui, Lampeng, Liao Duochang, Jin Hexiang, Wang Xingjie, Jiang Yan, Fu Jianxiong, Zheng Jun, Zhou Zhiyong, Fan Bin, Wang Yihua, Zhu Lirong, Shi Xiangdong, Xiao Ming, Chen Yunlong, Tang Kunlin, Lu Tianxing, Yang Jie, Shen Hongzhi, Tian Kai, Luo Binfei, Du Junhua, You Dajiang, Shuai Yubing, Liu Chengyu. The previous versions of the standards replaced by this standard are.

---GB 5031-1985, GB/T 5031-1994, GB/T 5031-2008;

---GB 9462-1988, GB/T 9462-1999;

1 Scope

China's national standard for tower cranes. The tower crane is the machine that builds every Chinese city, standing over a site for the duration of the works and growing with the building it erects. Its safety case rests on things that are all invisible from the ground: the foundation and the ties into the structure, the correctness of each climbing operation as the mast is extended, the load moment limiter that stops the operator lifting a load the crane cannot hold at that radius, the slew brake behaviour in wind, and the bolted joints of the mast

sections that carry everything. When a tower crane fails it does so completely and it falls across a site and often across a street, which is why the standard covers not only the manufactured machine but its installation, climbing and in-use inspection. It applies to tower cranes as defined in GB/T 6974.3, and specifies classification and identification, technical requirements, test methods, inspection rules, information, packaging, transport and storage.

This standard specifies the classification and identification of tower cranes (hereinafter referred to as tower cranes), technical requirements, test methods, inspection rules, information standards. Inspection, packaging, transportation and storage, installation and climbing, use inspection. This standard applies to tower cranes as defined in GB/T 6974.3. This standard does not apply to mobile cranes that can be installed with towers, with mounting masts without or with arms.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 699 high quality carbon structural steel

GB/T 700 carbon structural steel

GB/T 985.1 Recommended groove for gas welding, electrode arc welding, gas shielded welding and high energy beam welding

GB/T 985.2 recommended groove for submerged arc welding

GB/T 1591 low alloy high strength structural steel

GB/T 3098.1 Fastener mechanical properties bolts, screws and studs

GB/T 3098.2 fastener mechanical properties nut

GB/T 3274 carbon structural steel and low alloy structural steel hot rolled steel sheet and strip

GB/T 3323 metal fusion welding joints radiography General rules and safety requirements for

GB/T 3766 hydraulic drive systems and their components

GB/T 4728 (all parts) Graphical symbols for electrical diagrams

GB/T 5117 non-alloy steel and fine-grain steel electrode

GB/T 5118 heat-strength steel electrode